OIL WORLD

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*Announcing the NEW*

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## *Submersible Motor Centrifugal Pump*

**Pumps very large volumes of fluid at lowest cost per barrel!**

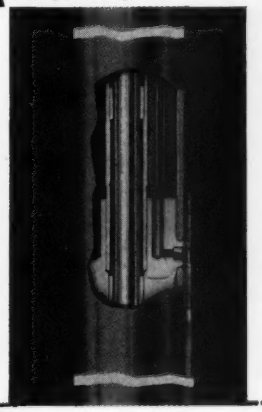
Byron Jackson announces the BJ Centrilift—a new sub-surface oil well pump designed for economy and dependability over a wide range of industry needs. These include water supply wells in flood projects...production wells in natural water drive or in artificial floods with low oil/water ratio...deep wells...fresh water or chemical brine wells...crooked or whip-stocked wells...and special applications for severe corrosive or abrasive conditions.

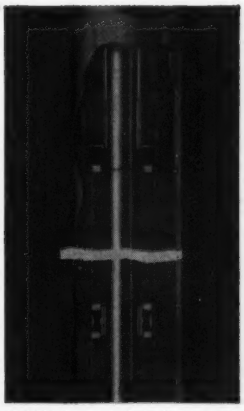
The BJ Centrilift combines the extra capacity of centrifugal pump design with the rugged economy of a close-coupled BJ Submersible motor drive. Submerged in well fluid and suspended on standard tubing, the BJ Centrilift offers the highest operating efficiencies with the lowest horsepower requirements... the lowest lifting cost per barrel of fluid. Fast, dependable field service is available through BJ Tools' network of plants, warehouses and field service centers.

**A product of more than 87 years of centrifugal pump leadership**

*Byron Jackson has been a leading pump manufacturer since 1872...pioneering in centrifugal pumps, including both deepwell turbine and submersible motor types. From this 87-year background of experience and leadership comes the great new BJ Centrilift—designed to serve a growing need for superior sub-surface pumps for the oil industry.*

**SEAL SECTION.** BJ Centrilift utilizes multiple mechanical seals, combined with simple pressure equalizing system for positive sealing reliability.





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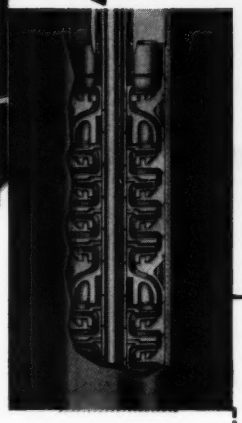

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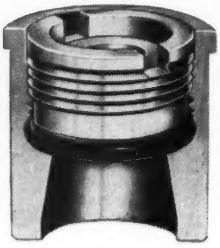

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# The Fountainhead of Energy

## Address by ALLAN NEVINS, Pulitzer Prize winning historian, Columbia University Symposium on Energy, November 4, 1959

When, just over a century ago—to be exact, on August 21, 1859—Colonel E. L. Drake made himself the Aladdin of petroleum, a nation hungry for energy unconsciously waited on his discovery. How hungry it was may be gathered from the fact that the engine which sank his 69½ foot shaft at the rate of three feet a day had barely six horsepower; and that one of the first wells driven by an imitator, James Evans the blacksmith, was "kicked down" by manpower.

It requires an effort of the imagination to carry us back to the corner of Pennsylvania and the primitive industrial world in which this discovery took place. By that effort, we can picture to ourselves the Pittsburgh of 1859, a grimy, boisterous town of coalminers, ironworkers, farmers, steamboatmen, and emigrants, its street crowded with carts and omnibuses, its sky tawny with smoke. We can picture the rough country stretching north from Pittsburgh to Lake Erie, green, wild, and empty. Through it run the blue waters of the Allegheny River; its margins becoming rockier and its current swifter as we ascend to the abrupt hills and unhewn forests of northwestern Pennsylvania. The upper Allegheny was yet a wilderness river, floating down rafts of timber; its tributary creeks threaded narrow valleys with poor marginal farms and shabby villages of obscure name—Titusville, Meadville, Tideiout. In some of these creeks patches of oil stained the water, but nobody had thought of these patches as energy.

Then came one of the most startling transformations in American annals. The wondering cry of "Oil! Oil!" raised by the young son of Drake's helper was a spark falling on a charge of explosive. The region filled with shouting men, long lines of straining teams and wagons, derricks, and engine-houses, hotels and saloons.

Throughout history, mankind in its incessant search for energy has been

Allan Nevins

haunted by a fear of shortages and ultimate exhaustion. Indeed, this spectral fear must run back to pre-history. No doubt the most intelligent Neolithic tribesmen, looking at the woods that gave them fuel and the aurochs that supplied meat and fat, sometimes ruminated: "What will happen when they are gone?" "One of the most interesting chapters of George P. Marsh's once-famous book, *The Earth as Modified by Human Action,* is entitled "The Destructiveness of Man," and treats of the scarcities of energy, in various forms, which man wantonly created. This apprehensive attitude can be traced down to our modern literature on the balance between natural resource and human population; it inspired Malthus, and troubled Aldous Huxley. Balzac's novel, *The Wild Ass's Skin,* may be regarded as a double allegory. This story of a young man who owns a magic piece of hide which grants him every wish, but which shrinks every time the wish is granted, expounds the law that every individual excess exacts its price. But its significance might be widened to expound the law that mankind pays a collective price for its extravagances. Balzac's hero was startled, after one orgy, to observe how terribly his magic piece of skin had shrunk; just so, Americans were startled, after the two World Wars, to note how those global orgies of hate and waste had depleted some of our irreplaceable resources.

Yet from age to age these historic fears have been proved false. This is partly because of the repeated discovery by man of such new stores of natural energy as Drake's well disclosed. It is interesting to note that European journals today are discussing the prospects of a world energy surplus in the immediate future. Coal stocks on the Continent and in the United Kingdom have lately totaled eighty million tons and, Poland and the Soviet Union have been making earnest

efforts to find European outlets for their coal. Still more impressive are the indications of a great augmentation in the flow of petroleum. Information given at the recent Fifth Annual Petroleum Congress indicates that the industry now anticipates a decade of oil surplus. Discoveries of petroleum have been made in the last few years at the rate of about thirty-three billion barrels annually, and world oil reserves —the wild ass's skin in this field of energy—are computed to offer a supply, at the present rate of consumption, for forty-two years. New discoveries will be made.

The release of new stores of energy has also been keyed throughout history to mechanical invention; a truth so obvious for nearly all of man's known past that we are tempted to think of invention as the master key of energy. By far the greatest part of the human record is a chronicle of mere muscle-power, exerted by men or draft animals. If windmills existed anywhere before the eleventh century, they were rare and primitive. Any effective use of the watermill, historically speaking, is as recent. All those who have studied the past from the standpoint of economics, and those especially who have studied economic geography, are aware that from the material point of view, history is primarily the story of the increasing ability of man to reach and control energy. In the endless centuries when energy meant muscle-power alone, how great an advance was the invention of the wheel, a device known to the ancient East, but one beyond the reach of the Aztec and Inca cultures. How great an advance, again, was registered by man when in 312 B.C. the Romans commenced the building of the Appian Way, almost the oldest and certainly the grandest of the roads with which they checkered Western Europe. The inventors of wheel, road and fulcrum carried the age of mere muscle as far as it could go; the men who, by the sail, the windmill, the waterwheel, harnessed those uncertain, treacherous helpers, the air and the stream, took but a short step beyond.

As in the symbolic figure of Colonel Drake we honor those who have uncovered new reserves of energy, so we should never cease to honor the men who have led the way, by mechanical invention, in its more efficient application. Doubtless the greatest single revolution in the history of applied energy dates from the hour when, at the beginning of the 18th century, a mechanic of Devonshire, employed as an iron-monger, became interested in the experiments of two or three older men in the use of steam as primary power. The mechanic was named Thomas Newcomen. The Britain about him faced an exigent problem. Coal was increasingly needed for heating houses, for the forge of the blacksmith, for the kiln of the limeburner, for the furnace of the lead smelter. Miners were driving their shafts deeper and deeper; and water had to be pumped from them in such enormous quantities that some collieries kept 250 or 300 horses to drive the pumps. The expense of the stables was enormous; muscle had gone as far as it could go. Already another ingenious mechanic, one Thomas Savery, had invented a means of lifting water from the mines; not an engine, but a device by which the sudden condensation of hot steam in an iron chamber created a vacuum, which raised water from the shafts. This device had no moving parts; it was slow and cumbrous, and Newcomen took a long step forward—one of the longest steps in history.

He invented a cylinder which enclosed a piston, and he applied Savery's principle of a vacuum in the wake of condensing steam to this new contrivance. That is, he projected the steam against the piston, forcing it upward; he then, by using a spray of cold water to condense the steam, created a vacuum which drew the piston down; and this reciprocating action of the piston produced pumping energy. His feat of the year 1712 was an event beside which Marlborough's victories pale into insignificance. Mankind could turn its face from the muscle-energy of horses, elephants, slaves, and servants, from the windmills of Don Quixote's Spain and the watermills of a thousand streams. Before Newcomen died in 1729 he had built twenty engines, his invention was pumping water from nearly all the large mines of Britain, and its fame was spreading to other lands.

Then came James Smeaton, who built a steam engine to take the place of such windmills as had long drained the lowlands of Holland and Lincolnshire. His engine was regarded as gigantic; its steam cylinder had a diameter of fifty-two inches, and its piston a stroke of nine feet. After him came a man of genius, the instrument-maker James Watt, whom the University of Glasgow hired to repair one of Newcomen's engines. He at once perceived its principal defect. It wasted, as Smeaton had calculated, more than ninety-nine per cent of the energy produced by its fuel. This was primarily because the cylinder was alternately heated by scalding steam and chilled by cold water to condense it. Watt made the condenser a separate part; the cylinder could remain hot. He also added machinery to produce two power strokes on each revolution instead of one, and a revolving shaft which made it easy to gear the engines to other purposes than pumping. The age of steam had arrived; the age in which a Boulton & Watt engine was soon giving energy to factories, and driving Fulton's *Clermont* on its historic voyage up the Hudson.

But neither the Newcomens nor the Drakes touched the true fountainhead of energy. While men were making windmills, mining coal, devising steam engines, ushering in the industrial revolution, and striking oil to speed it, an entirely different set of workers, actuated by quite another body of motives, was opening the true source. They were not concerned with raising water from Dutch polders, with putting electric currents to work, or making internal combustion engines. Most of them were utterly impractical. In the end, however, they were to harness energies far excelling any at the command of the prospector or mechanical inventor.

The story of the real openers of the fountainhead of energy might well begin in the thirteenth century with the Sicilian court of the Hohenstaufen head of the Holy Roman Empire, Frederick II. He was a monarch of insatiable curiosity. He knew six languages, was versed in mathematics, philosophy, and biology, and took a keen interest in medicine, patronizing the great school at Salerno. He was eminent as a lawgiver. But it was his concern with the discovery of scientific truth—pure truth for its own sake—which makes him immortally interesting. The Emperor Frederick converted his court in Norman Sicily into a meeting-place of Greek, Latin, Arabic, and Germanic cultures. He welcomed there the most eminent scientific thinkers whom he could find. One was Michael Scott, born in Scotland, schooled in Spain, travelled in all Europe; a cosmopolite, humanist, and research worker of vast renown. He knew Arabian astronomy, he translated Avicenna's book *De Animalibus,*

and he was proud of his accuracy in scientific observations and mathematical calculations. Another scholar at the court was Master Theodore, the philosopher who came to Sicily from the Great Caliph in Cairo; himself Greek or Jewish, he brought a fund of Eastern lore in mathematics, hygiene, and astrology. Still another member of the circle was Leonard of Pisa, forever famous as the man who introduced Arabic numerals and algebra to the West.

In founding the University of Naples and supporting the school in Salerno; in encouraging a large group of scientists to labor for abstract truth and nothing else; in corresponding with other monarchs to assemble scientific data; in collecting the greatest animal zoo of his time; and in making to scholars some searching inquiries which became renowned as "the Sicilian questions," Frederick set in motion impulses of wide influence. He put before the eminent Jewish scholar of Toledo, Jehuda ben Solomon Cohen, a striking series of geometrical problems. Through the Sultan of Egypt, he requested Moslem scholars to send him solutions of knotty problems in optics—one being, "Why do objects partly covered by water appear bent?" In short, his life gave new impetus to the human intellect.

Some of the Sicilian questions would strike many readers of today as silly; so true it is that, as Macaulay once wrote, men are slow to comprehend that truth grows first the tiny blade, then the empty ear, then the full corn in the ear. A scientific magazine recently offered a set of modern Sicilian questions, the interrogatives that a present-day Frederick would ask. "What is matter?" runs one of them. "How can it be both discrete particles, and continuous wave patterns of energy?" For another, "What holds the nucleus together?" For a third, "What is the source of cosmic rays, those mysterious high-energy particles?" For a fourth, "Why are galaxies spiral?" A fifth question runs: "What is the secret of the synthesis of protoplasm?" And finally, we find a query which should interest the conductors of quiz programs on radio: "Just what is memory?" May men, in the progress of knowledge, come to deem these problems absurdly simple too!

Frederick II died in 1250; the Holy Roman Empire entered on its long decay; and in time, after harrowing turmoil, a new age dawned. This modern age presently gave birth to what Alfred North Whitehead has called the century of genius—the 17th century. He gave it that label because he recalled that Newton was born in the year that Galileo died, 1642, and just as Descartes published his *Meditationes* and *Principia Philosophiae*. Within that century fall the great names of Francis Bacon, who opened it with his *Advancement of Learning* (1605), Kepler, Galileo, Harvey, Descartes, Pascal, Huyghens, Boyle, Newton, Locke, Spinoza, and Leibnitz—to give only twelve names when scores might be noted. What made this efflorescence of scientific genius possible?

Of the many factors involved, one of the chief was assuredly the shattering of the old theological modes of thought, and the rise of a new rationalism, a belief that the primary road to truth lay through an analysis of the nature of things. One was a rising sense of the detailed complexity of the order of nature. Still another element was the emergence of a superior mathematics, adequate to the analysis of vibratory phenomena. But the greatest factor of all, I think, was this: the development of society to a point at which great numbers of talented men could devote themselves, in numerous parts of Europe, to pure thought and pure scientific inquiry; where they had seats of learning, laboratories, command of leisure, and respect; and where they were free to publish the results of their thinking—for as Galileo died, and Newton was born, John Milton was about to publish his *Areopogitica*.

These men struck the fountainhead of energy with hardly a thought of its practical applications and none at all of its pecuniary possibilities. The poor German, Johann Kepler, in a life full of misfortune, succeeded by sheer genius, despite defective eyesight, in placing astronomy on an entirely new foundation. The yet greater Italian, Galileo, son of a decayed Florentine nobleman, helped make mechanics a science and vastly expanded the bounds of the universe by his telescopic observations and illumined numerous physical problems by his happy mastery of mathematical analysis. Both were great, and both in the long development of knowledge did a fertile work in enlarging our mastery of energy, because they pursued pure science and it alone. It is certain that Kepler, beyond drawing some astrological horoscopes for which he apologized on the ground of necessity, never thought of practical applications. Galileo's type of telescopic instrument is embodied in the modern opera glass; he improved the microscope when it was a new invention; and he formulated the rules by which the pendulum could be employed to regulate clocks, though he left it to Huyghens to apply the principle effectively. But in his passionate search for truth he never took thought for utilitarian ends, and the lack of 'practical results' would never have troubled him even had he not enjoyed a sinecure which honored the Italy of his day.

So it was with the other great immortals of science. Sir Isaac Newton was responsible for a many sided and inspired body of work on light, color, and optics. He discovered the binomial theorem. He formulated for his own time, and in great part for all time, the basic laws of mechanics. He performed many other labors. It is probably just to say that he did more to unlock the secrets of energy in the universe than any predecessor, and he opened the way for further discoveries of direct practical importance. Yet he was an essentially unworldly man, and the cost of publishing his *Principia* was defrayed by his friend Halley. Michael Faraday, the poor son of a blacksmith, was inspired by a lecture delivered by Sir Humphrey Davy at the Royal Institution with a passion to learn chemistry. He was soon Davy's assistant. Turning to electricity, he devised in 1831 the first electric generator, the dynamo which Henry Adams thought a fitting emblem of modern civilization; he first analyzed the suitability of different substances for electrical induction; and he laid down the law of electrolytic phenomena. Upon his discoveries were eventually founded a host of practical applications of electrical energy. To all this, however, he was indifferent. His mission in life, carried out in the Royal Institution, was the discovery of truth; others could make the applications.

Another illustration of the same attitude is provided by the Russian scientist Mendeleef, whose career should teach us much concerning the respect in which our chief rival in world affairs has long held pure science. When Mendeleef came on the scientific scene as a teacher in the St. Petersburg technological institute, during our Civil War, the atom was generally regarded as an ultimate entity. Matter could not be broken down into more infinitesimal elements; science could study the relations among atoms, but not probe within them. His laborious establishment of the Periodic Law, by which elements ranged according to the magnitude of atomic weights show a periodic change of properties, did much to create an entirely new conception of the atom. His law proved potent in classifying the elements, in predicting the existence and nature of elements yet unknown, in determining correct atomic weights, and in inspiring scientists to study the internal structure of atoms. Inquiry turned to the nature of electrons within the atom; by a momentous step the New Zealander Ernest Rutherford split the atom; and the sequels in the disclosure of an incalculably powerful source of energy are vaguely known to, if not understood by, the whole world.

Shortly after Dr. Abraham Flexner persuaded Einstein to take a research chair in the Institute of Advanced Study at Princeton, he published a plea for widening the type of opportunity for abstracted scientific work that he was giving the author of the theory of relativity. It was a plea, he said, for less emphasis on the word "use," and more emphasis on the freeing of the human spirit. "To be sure," he explained, "we shall thus waste some precious dollars, but what is infinitely more important is the fact that we shall be striking off the shackles of the human mind and setting it free for the adventures which in our own day have taken Hale and Rutherford and Einstein and their peers millions upon millions of miles into the uttermost realms of space, and released the boundless energy imprisoned in the atom. What Rutherford and others like Bohr and Millikan have done out of sheer curiosity in the effort to understand the construction of the atom has released forces which may transform human life; but this ultimate, unforeseen, and unpredictable practical result is not offered as a plea in justification of their careers." What Dr. Flexner termed curiosity I would call passion for exact truth; a quest for truth regardless of its immediate utility or inutility, undertaken in the confident belief that pure science will ultimately serve humanity even better than Watt and Stephenson, Edison and Marconi, Diesel and Westinghouse, served it.

Where are the real, the final fountainheads of energy? We, standing in the major universities of the land, amid laboratories and libraries, and almost within earshot of our cyclotrons, can say: "Here! Here are the men and agencies who will in the long run do most to reach the fountainheads." The plea for enlarged comprehension of this fact gains urgency. Not long ago the Atlantic Congress appointed a subcommittee on scientific and technical cooperation under NATO, composed of thirty distinguished men from ten NATO countries. Their report has just been published. The chief conclusions are four, which in my own language run as follows. First, the imminence of fierce economic competition from our opponents now forces us to reexamine the Free World's industrial foundations; its foundations of energy. Second, the growth potential of any economy is determined by its technological base, which in turn is determined by its scientific foundation; and the Atlantic Community cannot succeed unless it expands its scientific base in systematic fashion. Third, the footing of basic scientific research is found in the universities, and in the laboratories of industry, government and special scientific institutions. Finally, the new effort should be broadly international, and it would be well to found at least a few universities which would draw their faculties and students broadly from the whole Atlantic Community.

The history of the United States is the history of optimism and progress; it has not been so clearly the history of organized and purposeful effort; it has been still less the history of Spartan dedication to great and difficult goals. We must believe that we can and will succeed; but we cannot succeed without discipline, self-denial, and vision. We have been efficiently pragmatic but we must remember that immediate utility is not enough. We should have a civilization favorable to the spirit which animated Galileo in the University of Padua, Newton in Cambridge, Helmholtz in Heidelberg and Berlin, and Niels Bohr in Copenhagen. The energy represented by coal seams and oil pools is limited; here the magic piece of wild ass's skin will indeed shrink. But as the quest of pure science is endless, so the results it may bring, the vistas it may open, are infinite. Dr. Flexner took me once to spend a Saturday afternoon with Einstein. In the course of our talk, I happened to recall the familiar remark of Newton at the end of his life that, looking back, he could see that he had been only a child wandering on the shores of science, picking up a bright pebble here and there, while the boundless ocean of truth rolled all unplumbed beside him. The quotation for all its triteness fired Einstein. "Yes," he said with sudden fervor. "And that was not just a poetic image. Newton meant it precisely, every word." He implied that he too had been a childlike wanderer on the same shore. So it will ever be; while oil burns, dynamos whir, and machinery serves us all, the truest creators of energy will be those who have the higher fervor—who ask only for an opportunity to search the shore for more bright pebbles, to catch new gleams from the ocean of Truth.

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## "Diversion" Costs Motorists $303 Million in Roads

A whopping $303 million-plus in state taxes that should have been used for roads went to other purposes last year, a petroleum industry publication charges.

Oil Facts, published by the American Petroleum Institute, said the diversion came out of state highway user taxes that were designed to be spent exclusively on highways.

During 1958 this principle was violated to the tune of $303,326,000 by diversion of motorists' taxes to non-highway purposes, the publication maintained.

Diverted taxes represented 6.5 per cent of the $4.7 billion collected in highway user taxes by the states in 1958, Oil Facts said.

The pattern of diversion showed that California, Florida, New Jersey, Oklahoma, Rhode Island, Texas, Washington and the District of Columbia accounted for 86 per cent of the total diverted, the publication said. On the other hand, 20 states did not divert a single penny of highway user taxes to non-road purposes.

Oil Facts pointed out that the diverted money would have built over 1,000 miles of improved highway, enough to span the distance between Milwaukee and Boston.

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*More Than Forty Years Of Leadership In Petroleum Refining Technology*

By RICHARD SNEDDON

### Looking Backward

Having started my own oil career as a research chemist some thirty-six years ago, I am downright amazed at the extent to which organized curiosity has developed since I threw in the chemical sponge some time ago, and debauched into a particularly hackneyed type of hack writing which in my innocence I thought was a more lucrative form of occupation. In spite of my desertion from the ranks of the inquisitive brigade, however, I still believe sincerely that no other industry is more research conscious than the petroleum industry, and certainly few other industries have made such rapid strides because of it.

### What of the Future

**What oil's chiefs-of-staff have already done by marshalling the whetted intelligence of young men and women scientists in a continuous foray into the unknown is almost incredible, and what they are going to accomplish via the same route in the future is definitely in the realm of the fantastic. There are ultra-ethical people in our business, of course, who would take violent exception to this sort of adjectival bings but there is nothing extravagant or even exaggerated about my statements up to the moment and I refuse point blank to dilute my enthusiasm.**

### The Qualifications

Incidentally, in speaking of the fresh young technical people who are wrenching all substance apart these days and peering brashly into the scientific future, I referred to their "whetted intelligence." That word "whetted" is no accidental choice, it is used advisedly, because although they look to our faltering eyes like high school seniors, they come to the oil laboratories, plants and projects from courses of specialized study in which they have earned masters degrees, doctors degrees, and many other academic honors, including a fair stash of **cum laudes**. Their talents embrace a wide variety of sciences, some of them so new and obscure that even their names are not known to us ordinary people. Are you familiar, for example, with the work of the palynologist, or the aerobiologist? The former is an expert on the subject of spores and pollens. He has been mentioned in a previous chapter. The aerobiologist is a biologist whose prime interest is air-borne organisms, pollens, spores, viruses, etc., which is about the same thing. Both are now helping the oil finders to identify the geological strata more positively.

### The Young Doctors

**In my younger days a Ph.D in industry was a rarity, and usually before a man had absorbed enough education to be awarded one, there was a pronounced fringe on the cuff of his pants, and his hair had grown pretty gray around the temples. Today, there are almost as many Ph.D's as there are breakfast foods and as a rule they are young, virile people with no inhibitions, ready and eager to wrestle with the problems of the scientific world and ideally equipped to do so.**

They are directed now, as they should be, towards a full realization of their capacities. The result is that basically important discoveries are taking place so fast that it is difficult to assimilate or, indeed, to understand them—and, mind you, this is no departmental trend! There is not a single phase or facet of petroleum operation that escapes the searching scrutiny of these space-age explorers. We are living in an age in which at last it seems to be appreciated that a man doesn't need personality to be a genius and that a genius doesn't need personality to be useful.

**One of the most comforting advances of the present era is, I think, in the field of utilization. We have learned to make much more advantageous application of the increasingly varied talents that are available to us. This is not a criticism of the "personality" standard. There are unquestionably many places in the petroleum industry where an agreeable presence and a friendly attitude are decided assets, sales for instance, but there are other places where the lack of them is no great handicap. Besides, to be brutally frank about it, personality is a more or less nebulous quality, the specifications for which are not infrequently established by people who don't have any.**

### In Meter

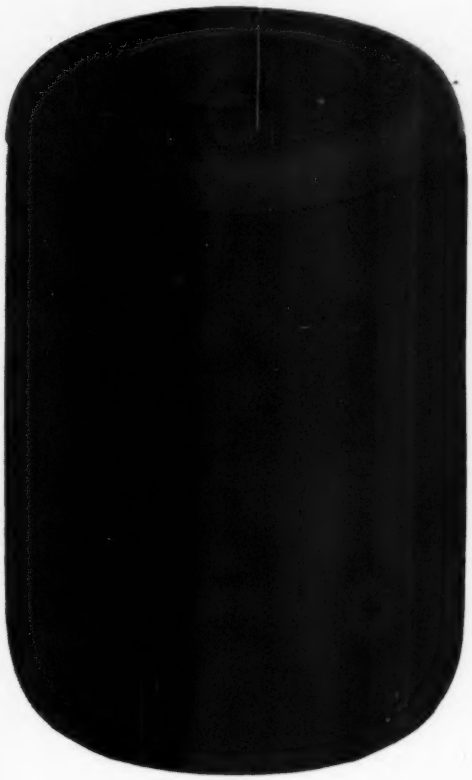
This, by the way, might be a good spot to confess that once, in the forlorn hope of being hailed as a potential Greenleaf or even a Whittier, I wrote a poem on this subject. Then, blushing furiously, I rushed upstairs to the attic and stuffed it into an old escritoire. Perhaps I should have left it up in the old escritoire and continued to blush furiously, but anyway, just to comfort others who may have fallen into the same futile ways, here it is:

RESEARCH

**Athwart the span of every livelong day we common mortals humbly take our way. Each walking in the same well-carven groove and well content that he may sowise move. But now comes one, avowedly the foe of satisfaction with the status quo. With tireless zeal he searches here and yon—and so he finds a better path anon. To this new way he leads his fellowmen. Then eagerly begins the search again.**

I realize, of course, that this sort of balderdash is less likely to drive young people to college than it is to cause the abolition of note paper and pencils, but I simply had to make room in the old escritoire for some more recent scriptural lapses

# GUIBERSON DRILL PIPE PROTECTOR RUBBERS

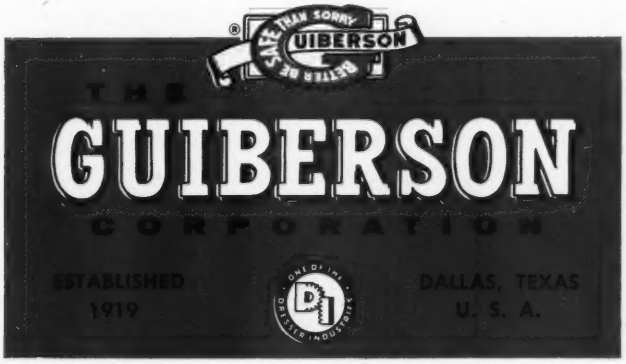


## *Stay Put.. Keep Their Grip.. Keep Their Size..*

**Guiberson drill pipe protector rubbers show their quality when we first put them on your pipe. And in the hole, they *stay put.* They can work in high temperatures or in oil base drilling muds— take a powerful amount of wear and abuse. *They keep their grip.***

**You get extra casing protection and extra performance from Guiberson protector rubbers because they're made from a special wear-resisting rubber compound, designed for universal application in all kinds of drilling. And you get it because Guiberson just plain *knows how* to mold and compound rubber products that can take the tough jobs in today's wells— and lick them.**

**That extra rubber know-how comes from Guiberson's long years of experience in manufacturing rubber products specifically for the oil industry. It comes from a rubber plant and laboratory staffed and equipped to do the specialized job right. When you want drill pipe protectors that won't walk and do maintain their original OD for a long, useful life, look to Guiberson for the answer.**



and, after all, if the reader is allergic to such piffle, all he has to do to get instant relief is to turn the page.

### The Current Low Down

**Now, without further delay, let us get down to fundamentals and take a look at some of the more exciting adventures of the petroleum researchers. It would take a lot of books to chronicle them all but it might be rather interesting for a starter to note briefly how oil has allied itself to the medical and surgical professions.**

The practice of medicine like most applied sciences, began life in a dense fog. Early treatments were based on the wildest superstitions, and drugs, or specifics and nostrums as they were then called, were pretty gruesome concoctions. The more revolting they were, the more potent they were believed to be, and it is quite probable that the people who lived longest in the dark ages were the ones who couldn't afford to go to a doctor.

**In these enlightened times it is hard for us to realize that there ever was a day when there were no antiseptics, no opiates, no sedatives —nothing to deaden pain. Surgery then was crude and cruel but it was often the only hope of prolonging life and the patient suffered untold tortures in that hope.**

### The New Order

Today surgery is about as painless as it could well be. Its practitioners can literally rebuild the human anatomy from the ground up or the hat down, as the case may be, and the medicos can do a pretty good stint of keeping it built up for a reasonable length of time if the proprietor will kindly pay attention to instructions. This, for no good reason, recalls the two young physicists who were strolling along the boulevard, chatting earnestly about the constitution of matter. Well, they weren't chatting too earnestly, for presently when a cute blond approached they both stared at her not just approvingly but with embarrassing admiration, and one of them blurted out, excitedly, "Boy, how's that for an arrangement of molecules?"

**When I was a juvenile delinquent instead of a mere abhorrer of juvenile delinquency, we had in our medicine chest at home a small jar of black smeary ointment, called "ichthyol" — a substance I hated with the fierce hatred of ignorance. It was used to cure boils and skin eruptions, one hoped, and was supposed to be pretty hot stuff for bringing back the old baby complexion. But, the kind of complexion I had when I was a baby I didn't want brought back so I could continue to hate the stuff with no complications.**

### About Fish Oil

What this ichthyol was, or where it came from, I hadn't the faintest idea at the time and wasn't at all interested. In due course, however, I came to California and before anyone could stop it I had become inextricably involved in the petroleum business. One day while traveling by auto to Coalinga, north of Blackwell's corner, I ran across the rotting remains of a few old and very short wooden derricks, and the skeleton of a plant of some sort. Upon inquiry I learned that this ensemble had been the work of an English syndicate and was designed to manufacture ichthyol from heavy crude oil produced in the area.

**Ichthyol, of course, takes its name from the Greek** ichthyos— **"fish," and knowing that petroleum was derived from ancient marine organisms, this syndicate came all the way from England to extract ichthyol in commercial quantities from Valley crude. The process was quite successful but what was laughingly called "the demand" for ichthyol dropped rather quietly to a scarcely audible whisper, and the entire proposition collapsed like an evacuated globe fish.**

### Oil as an Unguent

Following this startling disclosure I found through perusal of the Marco Polo diary that orientals had used petroleum itself since the earliest times for annointing the sore backs of camels. I learned, too, from our own history books that it had been sold as "an ointment for toothache, headache, swellings, rheumatism, and sprains" and was highly recommended as a "horse medicine." It would almost seem, indeed, as if the pioneer advertisers who saw all manner of healing virtues in petroleum had prophetic vision, for oil and its products are now contributing to the national health and welfare in an astonishing variety of ways, and new ones are developing daily.


GEARED FOR INDUSTRY
THE Lufkin LINE
OIL FIELD PUMPING UNITS

# CRYSTALBALLING THE SIXTIES

**In most every newspaper and magazine across the land, forecasts of the wonderful things to come in the '60's are reaching near epidemic stage.**

V. J. Fawcett

Things like driverless automobiles. Sounds like a definite improvement. Accident reports may read like this: "Gin playing car pool in driverless air-car rams vulnerable bridge playing group in saucer-wagon at interchange. No injuries resulted since all occupants were wearing safety suits (whatever they are), but a 2-hour tie-up resulted while police unscrambled 208 playing cards."

**And in the Sixties there will be more leisure, more automation, less work, and more people. Not much change in people—as far as the forecasters can tell, they'll still be male and female.**

There will be new toothpastes with mystery ingredients like mexacavity, noxenamelkwik, rexaset, hexatooth, and many more. And new filter smoking, like fantomfume, hexaclorafume, and asphyxanic.

**But all is not change in the decade ahead. Good service, good delivery, craftsmanship, and highest grade materials will continue to be a part of every Lufkin Gear, every Lufkin Oilfield Pumping Unit, just as it has always been since 1902.**

Lufkin FOUNDRY & MACHINE COMPANY

Anyone who is familiar with TV commercials, and that is anyone who has a TV, must be familiar with the term "acetylsalicylic acid" --"acetylsalicylate," or "aspirin" the most popular analgesic in history. An analgesic is a substance that renders one insensible to pain, from Greek an, "not," and algesis --"a sense of pain." "Aspirin" is a trade name compounded from the word "acetyl" which is the radical of acetic acid (refined vinegar) and spiraeic acid which is an old form of salicylic acid.

"Salicylic" in turn comes from "salicin" a pharmaceutical extracted from the bark of certain species of willow tree. The French word for willow is **salicine** and the Latin word is **salix**, and pharmaceutical takes its name from the Greek "**pharmakeia**"—to administer medicine. So the whole process started with some ordinary vinegar, and by the magic of chemistry we end up with aspirin, a stout enemy of the great American headache.

### Aspirin from Oil

**For some years the chemist had simplified the method of preparation by making aspirin tablets from coal tar. Now naphtha, a derivative of petroleum, is the principal source material. The naphtha is converted in the refinery to benzol which in turn is converted to phenol. At that point it merely needs the addition of a carbon dioxide ($CO_2$) radical to become salicylic acid. The final attachment of the acetyl radical to form acetylsalicylic acid is comparatively simple, so the oil industry performs another consequential service by keeping the jeweled pill boxes of millions of Americans adequately stocked with concentrated composure.**

The list of drugs and drug sundries that are either entirely or in part derived from petroleum, is a long one. Cyclopropane, which was discussed fully in the chapter on chemistry, is an excellent anesthetic which is much used in surgery and is especially popular for use in childbirth. It is not injected but is inhaled by the patient, and not only is pleasant to take but has no bad after effects. There is also an oil base tranquilizer that has been doing wonders in pacifying mental patients who are inclined to be destructive and are otherwise hard to control. Because of this drug, it is possible now to give these mental patients much better living conditions, that is, in the matter of room furnishings and that sort of thing.

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### Hospital Accessories

**Operating room walls are commonly coated with a special antiseptic paint made from petroleum, to keep them sterile. Experiments with a synthetic plasma have had considerable success although it is not yet considered a complete substitute for blood plasma. It is known as PVP, and no wonder! Who would want to use its full title, "polyvinylpyrroliodone"? PVP does most of the things that blood plasma does. It keeps the patient's blood pressure up, stimulates circulation, and relieves shock. It is easy to store since it doesn't require to be refrigerated and it can be administered to persons, regardless of their blood group. Most important of all perhaps, the supply is unlimited, it will not spoil, and it has many other prospective uses in hospitals and sickrooms.**

Then you may have heard that the conventional method of blood donation has been greatly improved through the separation of the plasma from the solid material by machinery, as the blood is being drained from the donor. The corpuscles are then reinjected. This keeps up the strength of the donor and enables him or her to make more frequent donations without serious consequence. The plastic vessels and tubing which form an important part of this device must, of course, be completely sterile, and whence do they come? From petroleum.

**In a number of research laboratories, synthetic hormones, derived at least in part from oil, are giving hope to the devoted men and women who have dedicated themselves to the eventual elimination of the greatest scourge of all time, cancer. Petroleum was the source of the sulfa drugs that took most of the peril out of pneumonia some years ago, and many of the more recent so-called "wonder drugs," have their base in petroleum. The ubiquitous liquid is a prime factor in the synthesis of antihistamine for the control of allergies and a number of the antibiotics, such as penicillin, terramycin, and chloromycetin, the function of which is to kill disease bearing bacteria or at least to stop or inhibit their growth.**

### Name Origins

The hormones take their name from the Greek verb **hormaein**, "to excite." They are glandular secretions that seem to have a stimulating effect on all sorts of body functions and to affect other cells that are far removed from the point of the secretion. Like many anatomical substances, such as the enzymes, their composition is very complex. It is difficult even to determine by analysis of what they are made up, so the actual duplication of any hormone by synthesis is a scientific accomplishment of no mean order.

**An allergy is an unusual sensitivity to some particular substance. It may be germs, pollens, egg-yolks, milk, hair food, or cloth. It shows itself in many forms, most common of which is some kind of skin eruption. The antibiotics take their name from the Greek** anti, "opposed to," **and** bios, "life." **They destroy living organisms and naturally those of the disease bearing type. Histamine is present in most animal tissues to some extent, in fact, it takes its name from the Greek** histion, **meaning "tissue." It is believed under certain conditions to open up the blood vessels and other channels in and around the nose and throat and leave them vulnerable to invasion by unwanted tenants that cause such nasty afflictions as asthma, hay fever, hives, and a variety of respiratory ailments. Antihistamine, needless to say, is designed to stop all these nefarious carryings on.**

The endings mycin and mycetin in the antibiotics are from the Greek word for "mushroom" and that probably indicates that they are fungus like species. Chloromycetin is no doubt "green fungus" from the Greek **chloros**, "green," terramycin is "earth fungus" from the Latin **terra**, and penicillin is a "pencil shaped fungus," from the Latin **penicilium**, a "pencil." Besides the medical aids already mentioned, oil has played a part in the synthesis of such essentials as vitamins, particularly K3, a blood coagulant that is commonly used to prevent hemorrhaging, and B12, our number one weapon against anemia. Then there is an anti-spasmodic (atropine) that is just what it says —a keeper down of spasms. It is used to treat the stomach bunching type of disorders and, in drops, helps you not to flinch when the doctor is examining or operating on your eye. Incidentally, this same doctor now uses a tongue depressor made of lucite which bends the rays of light coming from the outer end so that they illuminate your esophagus all the way down.

**The industry has also had a hand in the production of such ordinary medicaments as laxatives, sedatives, rubbing alcohols, and a wide variety of hospital accessories, including adhesive tape, surgical dressings, rubber gloves, soluble sutures (surgical thread), stethoscope parts, and plastic vessels of all shapes and sizes.**

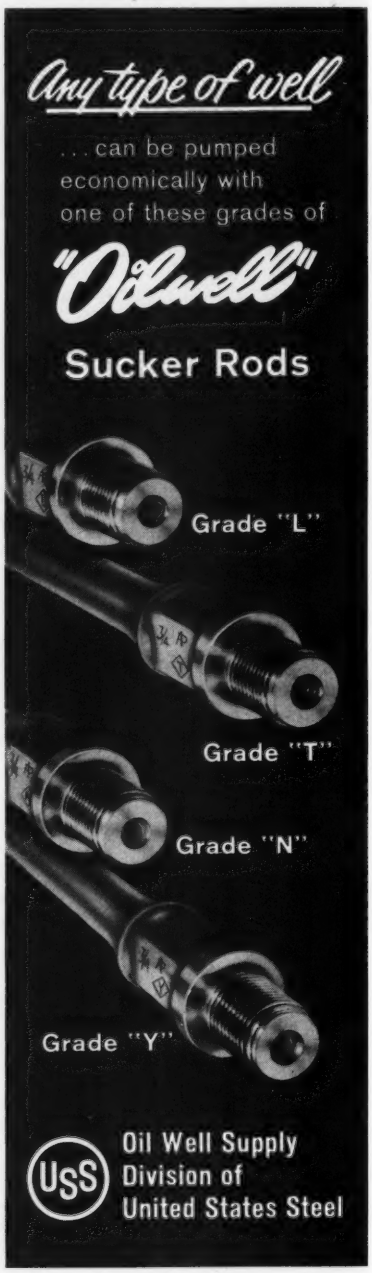
### An Artificial Lung

Three or four years ago, two surgeons reported the successful employment of a plastic lung to take over the breathing process for a patient whose pelvis and ribs were broken. This permitted the respiratory muscles to rest while the broken bones were set. The artificial lung was made out of oil-based plastic. Plastic tubes are now employed daily to replace damaged blood vessels and arteries. Synthetic fabrics have been used also to replace skin and tissues, and even to ease the aching joints of arthritis victims. Polyethylene plastic has mended many a bone and replaced many another. It seems to be ideally suited to the purpose, is especially immune to all the involved influences, and there is indication that in some instances such plastic insets will last even longer than their owners. The heart and the brain are not exempt from the new order. They are commonly overhauled by resourceful surgeons and most of the internal patching and replacement is done with artificial tissues, valves and tubes having an oil base origin.

**These are just a few of the ways in which oil is helping to stretch the allowable three score years and ten to the elastic limit, and if the medical profession and the petroleum researchers continue their cooperative advance for another few decades, we may possibly reach a point at which many of us will be more plastic than people. Joking aside, the ingenuity of the modern surgeon is a very heartening thing. Two big wars were in a large way responsible for accelerated medical research far beyond the normal pace. There was no time for deliberation and debate at the battle front. Decisions had to be made and action taken at once. The experience was in reality an enforced program of education that must have pushed surgical knowhow ahead a hundred years.**

### There Are Other Areas

And all this, it should be remembered, is only one of the many areas of scientific endeavor in which the oil people have made their mark. On a tour of a local laboratory some time ago, besides product and



process research, I noticed many interesting investigations going on. Men, very young men, were experimenting with radio active tracers to measure the flow of liquids of any conceivable dimension from a pinhole leak to the full course of a sizable river. The radio active material used was a gold isotope in infinitely small concentration. It was introduced into the stream and thereafter the relative extent of its presence at any given point in the stream was determined by an ingenious Geiger counter hook-up. The total amount of water passing the test point for any interval is directly related to the drop in radio activity. The device was designed for other uses in refinery and plant processes. By the way I was amused to find the boys referring to the Geiger counter as "the clucking hen."

### The Far Future

**Next I received an education on the purpose and required qualities of hydraulic fluids for supersonic planes. At the abnormal temperatures and pressures encountered by these planes, the lowering and raising of landing gear, wing flaps, and even the operation of windshield wipers present a variety of problems. Ordinary liquids can't take the conditions and the department was here trying to develop the best fluids for the purposes involved. With super-super-planes all about us now, the boys are still pursuing the perfect answers. In fact they were even looking for radiation resistant fluids for nuclear flying.**

Thence in another corner I found a second Geiger counter-isotope combination measuring the thickness of engine deposits to an accuracy of a few millionths of an inch. A run of a few minutes was all that was necessary to accumulate a measurable film. The isotope in this case was Nickel 63. It was contained in the fuel and the extent to which it activated the film determined the thickness. The gadget could be used for measuring boiler scale deposits or any other sort of accumulation or incrustation. I watched engineers checking a test engine with a 12 to 1 compression ratio under a wide range of simulated road conditions at temperatures from −40 to plus 120° F. They were searching for the fuels and lube oils of the future.

### And So on Endlessly

**In another lab an interesting analytical device was being tested. The process was to introduce a very small sample of mixed components into the apparatus. It then passed over a bed of material in which all of it was absorbed. A carrier gas, helium, was subsequently flushed through the absorbent medium. It stripped off the components one by one in the order of their boiling points and the proportion of each was measured by some kind of electrical device, not a clucking hen.**

Before leaving I was initiated into the methods of manufacturing detergents, from a petroleum compound, known as alkane. Then learned how coatings, plastics, and plasticizers were made from the xylene triplets, ortho, meta, and para, via such transition products as phthalic anhydride, isophthalic, and terephthalic; and finally how many fibers and fabrics are synthesized from the polyesters and the polyamides. There seems to be no end to it all and we shall have more to say about research later.

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## API Year End Report Shows Petroleum Gains

Demand for petroleum products in the United States during 1959 rose well over 4 per cent to an anticipated record high of 3 billion 473 million barrels, Frank M. Porter, president of the American Petroleum Institute, announced.

He estimated that total demand—which includes exports—will hit a new peak of 3 billion 558 million barrels. Exports themselves are expected to drop some 16 million barrels to about 84 million barrels.

Calculated on a daily average basis, domestic demand will reach 9 million 516 thousand barrels, as compared with 9 million 83 thousand barrels in 1958. Total demand will average 9 million 748 thousand barrels a day this year, against 9 million 358 thousand barrels in the previous 12-month period.

Domestic supply will average 7 million 909 thousand barrels a day, compared with 7 million 518 thousand barrels in 1958. Total supply—including imports—will average 9 million 649 thousand barrels a day. This is about 96 thousand barrels above 1957, which was the peak year for total supply. Of the 1959 total, imports of all oils contributed 1 million 740 thousand barrels a day—up 40 thousand from 1958.

Output of natural gas liquids, which fell slightly in 1958, will show a gain to a record high of more than 319 million barrels, Porter predicted. With U. S. crude production registering an increase to 2 billion 568 million barrels (from 2 billion 448 million barrels in 1958) the total domestic output of liquid petroleum in 1959 will amount to 2 billion 887 million barrels.

He pointed to Chase-Manhattan Bank preliminary reports which indicate that oil companies continued to invest heavily in the future. The reports show capital expenditures in 1959 rose some $200 million over the 1958 level to $5 billion 500 million.

The industry's year-end inventories of its four major products will record a drop for the second straight year. Other refined product stocks are also down. Crude oil stocks will show a decline from 262 million barrels to 244 million barrels. Total crude and refined inventories will decrease from 789 million to 753 million barrels. It is to be noted, however, that much of these stocks are working inventories and therefore unavailable.

Well completions in 1959 will run around 51,000, up about 2,000 over 1958. Footage drilled will come to 211 mililon, a gain of some 14 million over the previous year. Exploratory well completions will amount to 10,125, of which 8,700 will be dry holes.

## Richfield Has Spudded In Initial Test Well in Alaska

After five months of preparatory effort and expenditure of approximately $1.5 million, Richfield Oil Corporation has spudded in its initial test well in the Katalla-Yakataga area of southeast Alaska ahead of its contract deadline.

Located three miles north and 18 miles west of the Yakataga Federal Aviation Agency station, the Kaliakh Number One well is currently being drilled below 2000 feet.

Under terms of the development contract approved early in 1959 by the United States Department of the Interior, Richfield commenced drilling its first well by December 31.

The contract covers 489,622 acres along the coast of the Gulf of Alaska, east of the Copper River and west of Icy Bay. Two months ago the Interior Department announced approval of a second development contract with Richfield covering 571,121 acres adjoining the area covered by the first contract.

Preparations began early last summer when the drilling rig and other equipment was loaded onto landing ships for transport to Alaska. Two LSM's and an LST were used to carry gear to Yakatat Bay, from where the LSM's hauled the equipment 100 miles to the Icy Bay FAA station and landed it on the beach there.

From the beach, Richfield had to build a 23 mile road to the drill site.

A complement of 30 to 35 men is now stationed at the camp to carry on drilling operations. More than 50 men were in the area during unloading and moving in of equipment.

## *Petroleum Industry Pays Own Research Bill*

Did you know . . . . That 98 percent of petroleum research funds come from within the industry? The federal government foots only two percent of the bill, the lowest of any industry listed by the National Science Foundation. The industry spends about $300 million annually on the research for better processes and products.

## Change Proposed in District V Unfinished Oil Import Program

Oil Imports Administrator M. V. Carson, Jr., has announced proposed changes in the program for imports of unfinished oils into District V. These changes would allow importers to increase their imports of unfinished oil from 10 percent of their crude and unfinished allocation to 25 percent. However, the proposed changes provide that each barrel of unfinished oil imported would be charged as two barrels against their allocations. At present, imports of unfinished oils are charged against allocations on a barrel-for-barrel basis.

The Administrator's notice of proposed rule change provides that: "Interested persons may present written comments, objections or suggestions with respect to the proposed amendment to the Administrator, Oil Import Administration, Department of the Interior, Washington 25, D. C., within thirty days from the date of publication of this notice."

Russell B. Brown, General Counsel for I.P.A. of A. states:

"The proposed changes would have the effect of reducing the total level of crude and unfinished imports into District V. However, we are studying the proposal to determine what other effects these changes might have on domestic producers. For this reason, we would appreciate any reaction from the membership, particularly those members in California who would be affected by such changes in the import program, so that we may be in a better position to present comments to the Oil Imports Administrator."

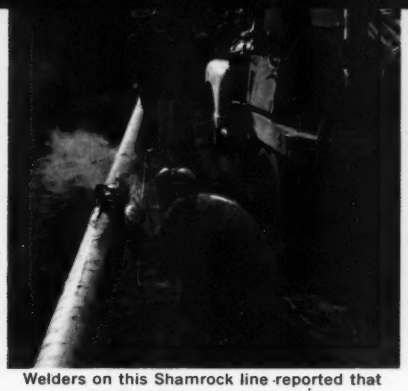
## Texaco Takes Further Steps To Control Air Pollution

Texaco Inc. has begun the site preparation for a new carbon monoxide boiler at its Wilmington refinery as a further step in its program to control air pollution, W. B. Logan, manager of Texaco's Pacific Coast Refining Division, announced in Los Angeles.

The steam boiler will be constructed as part of a 30,000 barrel per day fluid catalytic cracking unit on the south side of Texaco's refinery property. It will have a steam capacity of approximately 250,000 pounds per hour.

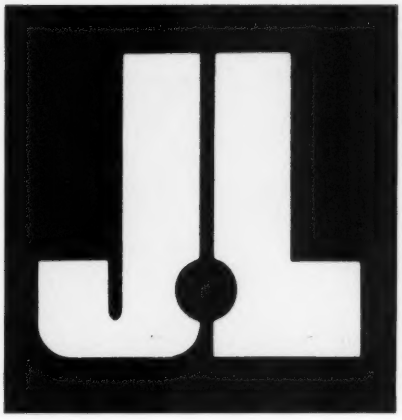
The boiler will burn combustible waste gases from the catalytic cracker which formerly were discharged into the atmosphere.

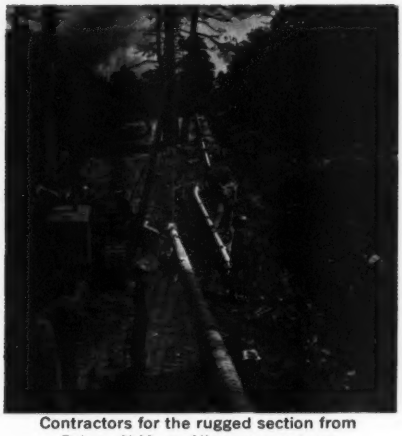
New six-inch products line will be operated by Shamrock for its affiliate, West Emerald Pipe Line Corporation.



Welders on this Shamrock line reported that J&L Electricweld Line Pipe was uniformly round, easy to weld.

Pipe is produced under strict compliance with appropriate A.P.I. and A.S.T.M. specifications.





Contractors for the rugged section from Palma, N.M., to Albuquerque were Groninger & King, Pampa, Texas.

Pipe is A.P.I. Standard 5 LX, Grade X 42, 12.89 pounds per foot, with a .188 inch wall thickness.

# "Superior weldability of J&L Electricweld Line Pipe was proved on this mountainous operation"

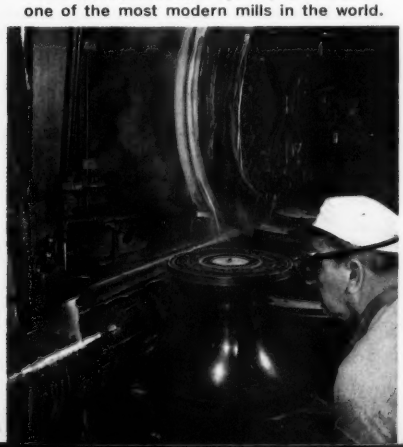
*. . . reports pipe line contractor*

Steep, mountainous terrain presented a real challenge to pipeliners working on this Shamrock Oil and Gas Corporation line from Amarillo to Albuquerque. Eighty-seven miles of 6⅝-inch J&L Electricweld Line Pipe were used in the rugged section from Palma, N.M., to Albuquerque. Performance proved conclusively that J&L Electricweld Line Pipe bends readily to contour, is easy to weld and is uniformly round. It is readily available from 6⅝ inches through 12¾ inches.

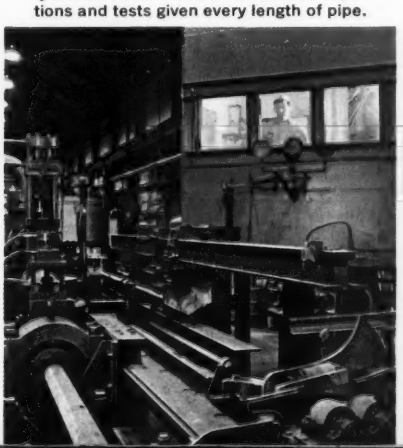
**Jones & Laughlin Steel Corporation**

PITTSBURGH, PENNSYLVANIA

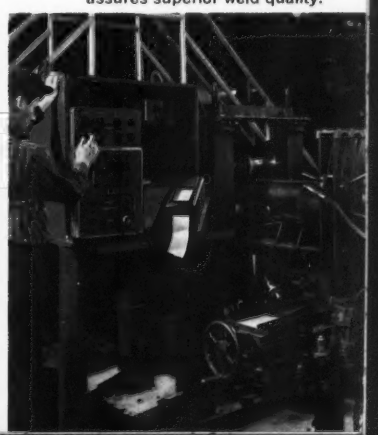
J&L Electricweld Line Pipe is produced on one of the most modern mills in the world.



Hydrostatic test is one of a series of inspections and tests given every length of pipe.



This modern J&L ultra-sonic tester assures superior weld quality.



Howard G. Vesper

## WOGA Elects Officers

Howard G. Vesper, president of Standard Oil Company of California, Western Operations, Inc., was elected president of Western Oil and Gas Association, trade association representing the oil industry in the six western states of Alaska, Arizona, California, Nevada, Oregon and Washington.

Vesper, a resident of Oakland, succeeds Olen Lane of Continental Oil Company.

Other officers elected were Howard C. Pyle, president, Monterey Oil Company, first vice president; George F. Getty II, president, Tidewater Oil Company, second vice president, and T. H. Wallace, vice president, Western Gulf Oil Company, treasurer.

Felix Chappellet was re-elected secretary, vice president and general manager of the Association.

Named as new members of the board of directors were Getty; Ralph Edgington president, Edgington Oil Refineries, Inc. and Harold C. Morton, partner, Morton and Dolley.

Re-elected to the board were:

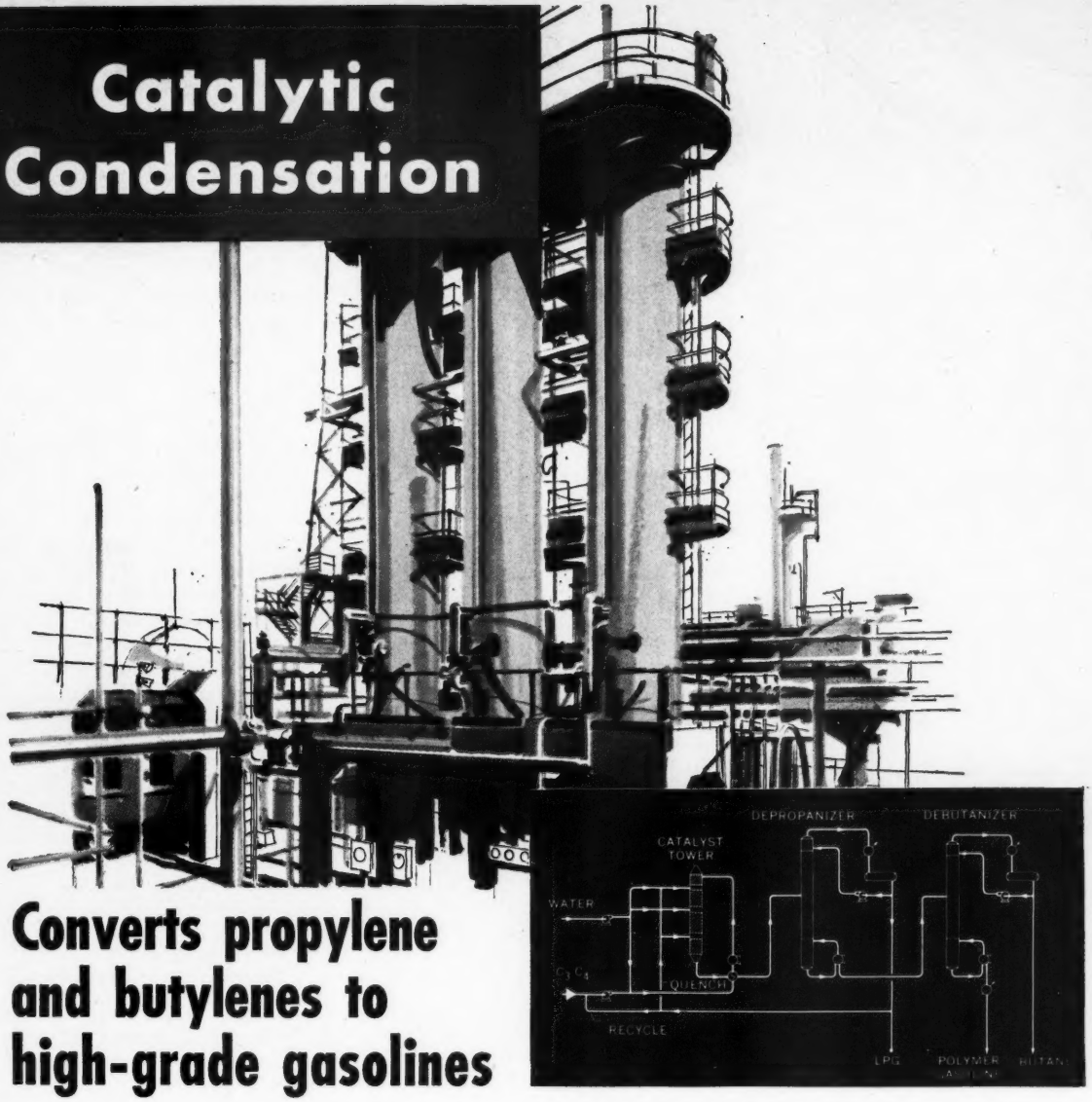
S. F. Bowlby, vice president, Shell Oil Company; H. D. Campbell, president, Franco Western Oil Company; Edwin G. Coopman, president, Wilshire Oil Company of California; L. A. Cranson, president Honolulu Oil Corporation; B. E. Devere, president, Pathfinder Petroleum Company; John H. Douma, vice president, Sunray Mid-Continent Oil Company; Stuart H. Durkee, vice president and treasurer, The Superior Oil Company; Rollin Eckis, executive vice president, Richfield Oil Corporation; Richard E. Faggioli, manager California area, Humble Oil & Refining Company; J. M. Feldman, president, Golden Bear Oil Company; Russell H. Green, Sr., president, Signal Oil and Gas Company; E. B. Hall, president, Drilling and Production Company; Mr. Lane; Downs McCloskey, manager California division, Amerada Petroleum Corporation; Ross McCollum, president, National Oil Company.

C. Edward Miller, chairman of the board, Time Oil Co.; R. L. Minckler, president, General Petroleum Corporation; Lee S. Osborne, vice president, Union Pacific Railroad Company; Mr. Pyle; Herbert L. Reid, executive vice president, Kern County Land Company; George Sowards, division manager, The Ohio Oil Company; John L. Stephens, vice president, Chanslor-Western Oil and Development Company; Jasper W. Tully, president, Reserve Oil and Gas Company; Mr. Vesper; R. R. Von Hagen, president, Lloyd Corporation, Ltd.; Mr. Wallace and James T. Wood, Jr., vice president, Texaco Inc.

**THREE NEW MEMBERS WERE INDUCTED into the Los Angeles Chapter of Nomads at its December 9, 1959 meeting. Shown between Charlie King of Baker Oil Tools, ritual master, on the right and Chili Sutton of Oil Well Mfg. Company, assistant, on the left, they are (left to right) Louis Q. Webber of Martin-Decker Corporation, regular member; Robey Deem, export representative, associate member; Glenn S. Prosser of Axelson Mfg. Company, regular member.**

**INTERNATIONAL GUESTS AND SPEAKER at the December 9, 1959 meeting of the Los Angeles Chapter of Nomads. Left to right (standing) Frank R. Wilmer of Shell Oil Co. of Venezuela; T. L. Crowe of Baker Oil Tools from Venezuela; Richard A. Walker of Walker-Jacobson & Associates, guest speaker; Eberhard Witte of Fagro from Germany; Richard L. Jewell, Ex-Shell of Venezuela; (seated) G. H. Allen of Camdrill from Libya; Al Dysart of American Independent Oil Co. from Kuwait; Perry F. Olwings of I.P.C. from Iraq; John E. Harden of Armco Argentina from Argentina.**

# Catalytic Condensation




## Converts propylene and butylenes to high-grade gasolines

This is another UOP process designed to help the refiner realize his greatest potential. Catalytic Condensation converts the propylene and butylene portions of refinery gas into high grade motor gasolines, by contact with UOP Solid Phosphoric Acid catalyst. Polymerization may be controlled to yield products which, on hydrogenation, produce saturated gasolines of high octane number.

Catalytic Condensation also offers an efficient means for producing specialty polymers of light olefins, for which there is a rapidly growing market for chemical use. For example, propylene can be polymerized to products rich in $C_6$, $C_9$, or $C_{12}$ olefins, which are useful as raw materials for producing detergents and alcohols. The process may also be used to react ethylene and propylene with benzene to form, respectively, ethylbenzene for the production of styrene, and cumene for use in manufacturing acetone and phenol.

This is but one of many refining and petrochemical processes available from UOP. Write for process brochure and detailed information.

**UNIVERSAL OIL PRODUCTS COMPANY**

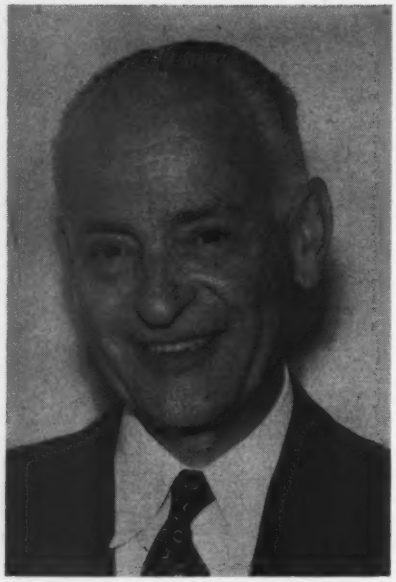
**30 Algonquin Road, Des Plaines, Illinois, U.S.A.**

*More Than Forty Years Of Leadership In Petroleum Refining Technology*



BOUND JAN 1962

# Personalities IN THE NEWS



Owen P. Lake

### Retires After 36 Years Service With National Supply Co.

**Owen P. Lake** has retired after 36 years service with the National Supply Company.

Lake started with the company in 1923 in the stock control department of the Torrance, Calif., plant. He was transferred to the sales department in 1925 and was assigned to the export desk in that department in 1936.

He was transferred to the Export Division in 1947. When the division opened a branch office in Torrance in 1955, Lake was appointed manager.

### Sutorbilt Appoints New Regional Sales Manager

The appointment of **Richard T. Kelton** as its western regional sales manager was announced by Sutorbilt Corp., manufacturer of blowers, gas and vacuum pumps. In his new position, Kelton will supervise technical sales in the western portion of the United States.

His business headquarters will be at the Sutorbilt home office, 2966 E. Victoria St., Compton, Calif.

### Drake Retires From Atlantic Oil Company

**Merle Drake,** manager land development, Atlantic Oil Company, is retiring after 20 years service with the company. Mr. Drake started his oilfield career with the Standard Oil Company in 1915 and has been in the oil business continuously for 45 years.

### Borg-Warner Announces Appointment of Director Of Manufacturing Services

Appointment of **William F. Martin** as director of manufacturing services for Borg-Warner Corporation was announced recently.

Prior to the announcement of his new position, Martin was vice president in charge of manufacturing for Borg-Warner's Byron Jackson Division, West Coast producer of oil field tools and services, pumps, rubber products, and electronic instruments.

In his new assignment as director of manufacturing services he will be responsible for promoting manufacturing efficiency and quality of product through advice and assistance on production problems, plant improvement programs, operating methods and purchase of machine tools.

### Honolulu Oil Appoints New Member to Board

**L. A. Cranson**, president of Honolulu Oil Corporation, announced that at a meeting of the directors of the Corporation in San Francisco on December 15, 1959, **William B. Moses, Jr.**, Trustee of Massachusetts Investors Trust, Boston, Massachusetts, was elected to Honolulu Oil Corporation's Board of Directors.

In addition to Messrs. L. A. Cranson and William B. Moses, Jr., the other directors on the Honolulu Oil Corporation Board are as follows: A. G. Budge, H. W. Clark, A. S. Donnelly, W. H. Kraft, A. C. Mattei, J. G. McIntosh, W. M. Roth, W. P. Roth and R. Sevier.

### Tidewater Names Truran

**George H. Truran** of the Tidewater Oil Company has been named to the newly created position of division production superintendent, it was announced recently by **Charles R. Brown,** vice president and general manager of the Flying A firm's western division.

Formerly administrative assistant to the production manager of the western division, Truran has been with Tidewater since 1946 when he joined the petroleum firm as a production engineer at Bakersfield.

A. Foster Sheller  Clarence W. Hahn

### Sheller and Hahn Receive New Responsibilities at Waukesha

**A. Foster Sheller** has been named manufacturing manager of the Waukesha Motor Company in an announcement by **James E. DeLong,** president.

In his new position, Sheller will supervise and coordinate activities of the departments within the organization directly concerned with, or closely related to the manufacturing process. These include purchasing, tool design, plant engineering, personnel, inspection, production, manufacturing, rate and time study, and the Climax plant at Clinton, Iowa.

**Clarence W. Hahn,** who was made production manager of the Waukesha Motor Company in 1957, has also been given additional responsibilities in the organization, according to DeLong. Hahn's duties have been extended to include supervision of all manufacturing and shops

### U. S. Steel Appoints Area Manager, Refinery and Pipe Line Sales

The appointment of **Norman G. Kirkland** as area manager—refinery and pipe line sales, United States Steel Corporation, has been announced by **D. D. Grubbs**, California area manager of the division. Kirkland will be located in Los Angeles.

Kirkland was employed by "Oilwell" in October, 1948, at Bakersfield, Calif. He was transferred to Taft, Calif., and appointed field representative in September, 1950. In January, 1952 he was transferred to Los Angeles as city representative and in August, 1953 was appointed assistant district manager at Bakersfield.

He served as assistant to area manager upon his transfer to Los Angeles in October, 1955, remaining here until his transfer in July, 1958 to Long Beach, Calif., as assistant district manager—basin coastal district. Prior to this appointment he served as city representative at Los Angeles, where he was transferred in November, 1958. He is a native of California.

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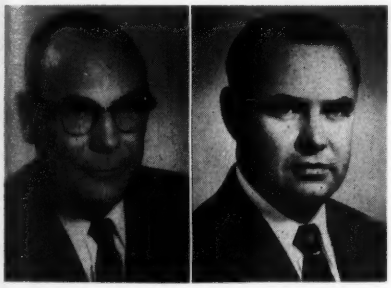

Charles L. Baker  Harry E. Byerrum

### Baker Steel & Tube Announces Two Promotions

**Charles L. Baker** has been named general manager of Baker Steel & Tube Co., distributors of steel and aluminum tubular products. He succeeds **J. Perc Boore**, who has retired after 19 years with the firm. At the same time, **Harry E. Byerrum** was appointed Los Angeles district manager for the company.

The Baker Steel & Tube Co. operates complete service centers in Los Angeles and San Francisco. Complete stocks are maintained at both locations including carbon, alloy, and stainless steel tubing and pipe for aircraft and commercial applications. A complete line of aluminum tubing is also carried.

### Continental Oil Promotes Malott To Ass't. General Manager in L. A.

**K. W. Brill**, New York City, has been appointed vice president and assistant general manager of Continental Oil Company's Rocky Mountain region, with headquarters in Denver, Colo., it was announced recently by **L. F. McCollum**, president.

It was announced at the same time that **J. P. Malott**, Denver, assistant general manager of Conoco's Rocky Mountain region since July, 1958, has been promoted to general manager of the company's western region, with headquarters at Los Angeles, Calif. **Olen Lane**, Los Angeles, vice president of Continental, will continue in that capacity and will devote the major portion of his time to industry affairs.

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### California Research Corporation Announces New Appointments

**Dr. H. Brandt** has been appointed Group Supervisor in the Producing Technology Division at the La Habra Laboratory.

**Dr. E. L. Dougherty** has been appointed Group Supervisor in the Oil Recovery Division at the La Habra Laboratory.

**Dr. H. Y. Jennings** has been appointed Group Supervisor in the Gas Processing and Producing Technical Service Division at the La Habra Laboratory.

**Dr. R. J. Runge** has been appointed to the position of Senior Research Physicist, Theoretical Geophysics, in the Geophysics Research Division at La Habra Laboratory.

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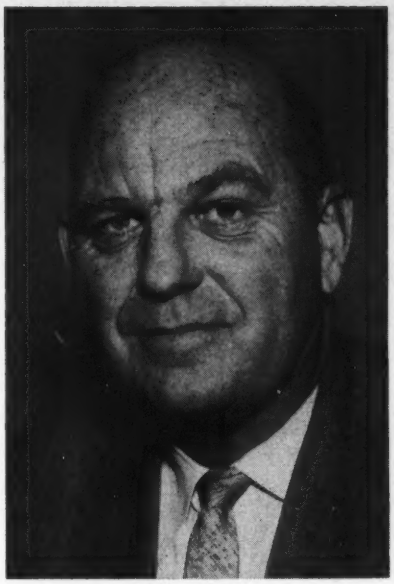
### Schlumberger Announces New Field Assignments

Schlumberger Well Surveying Corporation has announced the assignment of **T. E. Obenchain, C. R. Ferguson** and **J. W. Reinders** to new field locations.

Obenchain, formerly field engineer at Rock Springs, Wyo., has been promoted to sales engineer and transferred to Billings, Montana. Ferguson moves to a sales engineering post at Fort Morgan, Colorado, from Cortez, Colorado. He formerly served as field engineer at the firm's Cortez office.

J. W. Reinders has been transferred to Lubbock, Texas, where he will fill the position of location manager.



H. W. Robinson

### Bethlehem Steel Co. Names California Resident Sales Manager

**H. W. Robinson** has been named California resident sales manager of Bethlehem Steel Company's Supply Division by **C. R. Zimmerman**, vice president of the supply division.

Robinson was formerly manager of stores with the supply division when it was affiliated with the former Bethlehem Pacific Coast Steel Corporation.

His new duties involve the promotion and sales of all products manufactured and sold by the supply division and distributed through Howard Supply Company. Robinson will also be responsible for maintaining sales contacts with all California operators who have operations in the Mid-Continent and Rocky Mountain area and where the purchases for such operations are controlled in California.

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### U. S. Steel Appoints Manager, Drilling Equipment Sales

Appointment of **William S. Lennard** as manager-drilling equipment sales here for U. S. Steel's Oil Well Supply Division was announced by **D. S. Grubbs**, California Area manager of the division.

Lennard was employed by "Oilwell" in August, 1948 at Los Angeles. He was transferred to Long Beach, Calif., in 1950 and appointed assistant district engineer, returning to Los Angeles in July, 1953 as assistant to area engineer. He was appointed city representative at this location in April, 1955 and held this position prior to this appointment.

## Summary of District V Oil Industry Conditions October (and November Preliminary) 1959

*By Oil Producers Agency of California*

### Highlights

October saw continued withdrawals from storage, but at a considerably reduced rate. At 4,000 b/d, October reductions compared with 110,000 b/d in September and with an average of 42,000 b/d for the 10-month period.

During the 10 months, total withdrawals were 12,801,000 barrels, compared with withdrawals of 4,307,000 barrels during the corresponding period of 1958.

A summary of U. S. Bureau of Mines data for October, with an estimate for November based upon weekly American Petroleum Institute and U. S. Bureau of Mines reports, follows.

### Total Supply, Demand and Stocks

Total supply in October was 1,326,000 b/d, 2,000 b/d less than supply of 1,328,000 b/d in September but 72,000 b/d more than the average of 1,254,000 b/d in October, 1958.

October demand was 1,330,000 b/d, 108,000 b/d less than the September level of 1,438,000 b/d but 22,000 b/d higher than that of 1,308,000 b/d in October, 1958.

Stocks decreased 117,000 barrels, 4,000 b/d, during October and were 128,199,000 barrels on October 31, compared with 128,316,000 on September 30 and 140,077,000 on October 31, 1958. The year's decrease was 11,878,000 barrels.

Weekly figures for November indicate that total supply was 1,345,000 b/d, demand was 1,408,000 b/d, and stocks decreased 63,000 b/d. This decrease, 1,890,000 barrels for the month, would bring stocks to 126,309,000 barrels on November 30, compared with 139,309,000 on November 30, 1958. The year's decrease was 13,000,000 barrels.

### Crude Production, Imports, and Stocks

Crude production dropped 3,000 b/d to 838,000 b/d in October, compared with September's 841,000 b/d. In October, 1958, crude production was 856,000 b/d.

Crude and unfinished oils imports during October were 269,737 b/d, including 39,396 b/d of exempt Canadian imports. In addition, 3,223 b/d of products were imported.

Crude stocks decreased 769,000 barrels, 24,000 b/d, during the month and were 33,484,000 barrels on October 31, compared with 34,253,000 on September 30 and 39,202,000 on October 31, 1958. The year's decrease was 5,718,000 barrels.

Weekly figures for November indicate that crude production was 839,000 b/d, imports were 257,000 b/d, and stocks increased 27,000 b/d. This increase, 810,000 barrels for the month, would bring stocks to 34,294,000 barrels on November 30, compared with 38,443,000 on November 30, 1958. The year's decrease was 4,149,000 barrels.

### Residual Fuel Supply, Demand, and Stocks

Supply of residual fuel in October was 277,000 b/d, 3,000 b/d higher than the September average of 274,000 b/d, but 29,000 b/d lower than the level of 306,000 b/d in October, 1958.

Residual fuel demand was 280,000 b/d in October, down 22,000 b/d from September's 302,000 b/d, and down 10,000 b/d from the average of 290,000 b/d in October, 1958.

Stocks of residual fuel decreased 97,000 barrels, 3,000 b/d, during the month and were 26,367,000 barrels on October 31, compared with 26,464,000 on September 30 and 34,272,000 on October 31, 1958. The year's decrease was 7,905,000 barrels.

Weekly figures for November indicate that residual fuel supply was 287,000 b/d, demand was 320,000 b/d, and stocks decreased 33,000 b/d. This decrease, 990,000 barrels for the month, would bring stocks to 25,377,000 barrels on November 30, compared with 33,602,000 on November 30, 1958. The year's decrease was 8,225,000 barrels.

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## Standard to Build New Chemical Plant at Richmond

Construction of a multi-million dollar plant for the manufacture of the chemical maleic anhydride has been started at the Richmond Refinery of Standard Oil Company of California. The twenty million pound-per-year installation is being built by Badger Manufacturing Company of Cambridge, Massachusetts, for Oronite Chemical Company, a Standard subsidiary. Completion is scheduled for mid-1960.

Maleic anhydride is a chemical intermediate widely employed in production of plastics for boats, auto bodies and household appliances; high grade paints; textile wetting agents and agricultural chemicals. The new plant is the first such installation in the West.

## Expect Exploratory Drilling In Western Canada This Winter to Reach Record

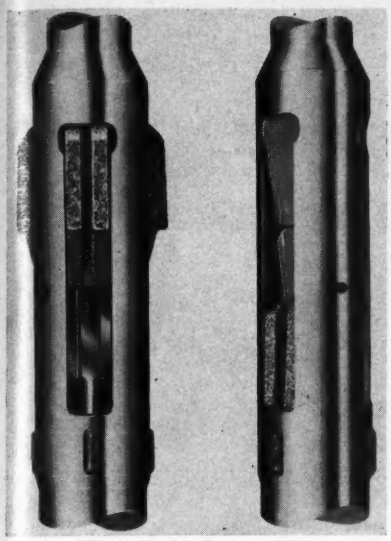
Canada Southern Petroleum Ltd. reported a prospective step-up this winter in the tempo of exploratory drilling operations in the Northwest Territories and Northeast British Columbia, probably 50% higher than for any previous season. John W. Buckley, Canada Southern president, stated as a "strong probability" that a minimum of 12 of these exploratory tests will be drilled on Canada Southern properties.

Commenting in a progress report to the company's stockholders issued recently, Buckley declared that the exploratory drilling operations planned on Canada Southern properties in the Northwest Territories held "special significance," since they would represent "the first tests of the largest structure known to have been mapped by seismic methods in the sedimentary basin of Western Canada, east of the Rockies."

These tests were scheduled to begin soon after December 15 on the 1,200,000 acres farmed out by Canada Southern last June to a group comprised of Home Oil Company, Signal Oil & Gas Company, Kern County Land Company, Alminex Limited and United Oils, Limited. Under the farmout agreement, the Home-Signal team agreed to pay a cash bonus of $3.5 million and to expend a minimum of $3 million on exploration in exchange for a 50% interest.

Buckley said that exploratory drilling planned for Northeast British Columbia includes tests by Phillips Petroleum at its Kledo Creek No. 1 location, approximately 35 miles west of Fort Nelson, in which Canada Southern holds a 27¾% interest, and a second test at a site in which the company has an identical percentage interest, located about three miles northwest of Sinclair's important Doig River oil discovery.

Discussing the company's interests in the Fort St. John—Boundary Lake area, Buckley said that the prospects of early construction of the recently announced oil pipeline into this area by Peace River Oil Pipeline Ltd. may be expected to result in a record development drilling program at the Boundary Lake field this winter. He said the 15 oil wells completed in the field to date are estimated to have put on additional 60 locations in a proven and semi-proven category.



"Body-Lock" Section Mill

## Grant Oil Tool Announces All-New Section Mill

Grant Oil Tool Company announces that its all-new "Body-Lock" Section Mill is consistently milling 30-foot sections in all weights of casing at rates of up to five feet per hour in one trip with improved safety.

This new Grant tool is reported to be the first section mill designed "from scratch" exclusively for milling sections of casing in all weights and under all hole conditions. Recognizing the limitations of existing tools, which are essentially modified underreamers, Grant engineers started with the requirements for successful section milling and designed a tool to satisfy them. Nearly two years of research and field testing produced a mill meeting the desired performance and safety standards.

A basic feature of the Grant Section Mill is that the broad bases of the three cutter blades are locked tightly within the tool body during operation. This eliminates the danger of cutter arms bending or breaking off and prevents the blades from being collapsed by side pressure. It also permits the operator to apply greater weights for faster progress.

The Grant "Body-Lock" Section Mill combines hydraulic and positive mechanical forces to activate the blades and hold them in maximum operating position. A hydraulically impelled piston drives the cutters up the inclined planes of the wedge mandrel within the body pockets.

The exclusive "blade guide" feature of the cutters assures positive centering of all three blades during milling. Shallow body pockets are sealed by the inclined planes of the wedge mandrel to prevent the collection of cuttings and shavings; thus assuring trouble-free retraction.

The extra large cutter blades are faced with fragmented tungsten carbide for sharper milling action. Elimination of complex hydraulic mechanisms, hinged cutter arms and large recesses give the Grant Section Mill the longest wear-life attainable today.

## American Chemical Corp. Opens New Headquarters

Headquarters of American Chemical Corporation were established Dec. 9, 1959 in the company's newly completed office building at 2112 East 223rd Street, Long Beach.

The general offices are on the site of the west's newest petrochemical plant which went on stream early this month to produce chlorinated hydrocarbons and polyvinyl resins. Some 50 employees have already begun work at the new location.

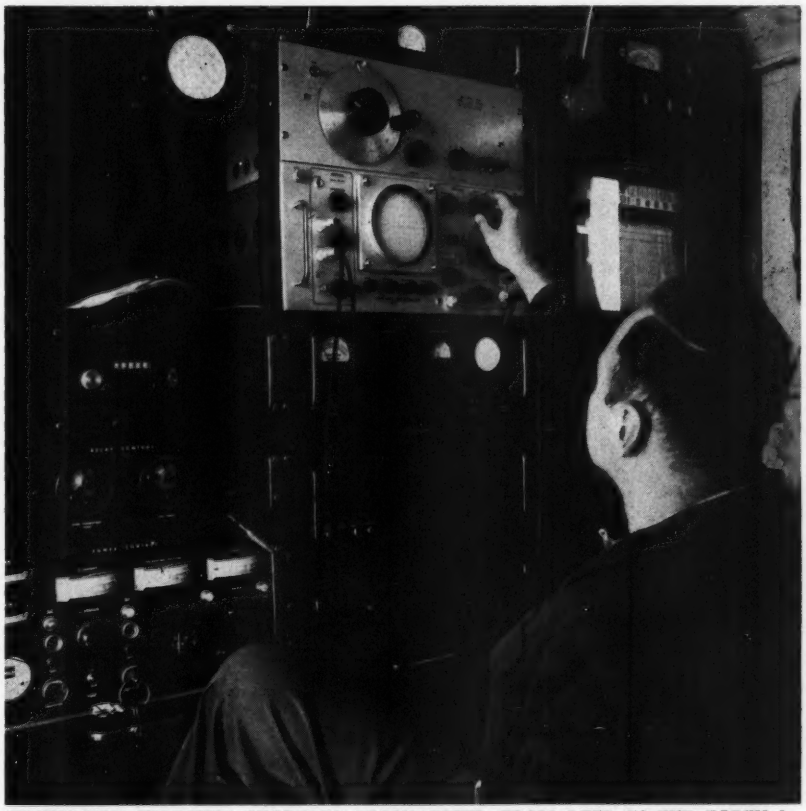
American Chemical Corporation is jointly owned by Richfield Oil Corporation of Los Angeles and Stauffer Chemical Company of New York City.

## Test Show Air Drive Aids Oil Recovery After Water Flood

Laboratory tests indicate that "substantial oil recovery by air drives" is possible following water flooding in the secondary recovery of petroleum, according to a report made by F. W. Cole, J. V. Cowan and M. L. Jackson in a paper, "Miscible Displacement Studies Using Radial Cores," presented at a symposium during the 52nd annual meeting of the American Institute of Chemical Engineers in San Francisco recently.

In a series of experiments on cores of sandstone of the Pennsylvania Nelly Bly formation outcropping near Tulsa, Okla., use of air after water flooding resulted in additional oil recovery of 10 per cent, they said.

"This additional recovery is attributed to the location of the residual oil phase following a water flood. In this strongly water-wet core the residual oil saturation is presumed to be in the larger pore spaces, where it would be susceptible to displacement by a non-wetting displacing fluid."



**TECHNICIAN WATCHES READINGS TRANSMITTED FROM DEEP IN THE EARTH by Nuclear Magnetism Logger, new instrument developed by Standard Oil of California scientists to bracket oil deposits. Revolutionary well logging tool is expected to give oilmen much more accurate information on location and nature of subsurface fluids.**

# Field Development

## Pacific Coast and "4" Corners

### LOS ANGELES BASIN

#### Farmers Market Test

Buttram Petroleum Corp. of Oklahoma City has awarded a drilling contract to C.A.P. Drilling Co. for a 8500 foot test on the Gilmore-Farmers Market property north of Third Street and west of Fairfax Avenue. The well location is south and west of the intersections of First Street and Stanley Avenue and a short distance to the north of Shell Oil Company's Verne Community No. 1, drilled and abandoned in 1943 at a total depth of 7942 feet.

#### Lancaster Test Abandoned

Six miles south of Lancaster in the southeast quarter of Section 27-7n-13w, COMCO has abandoned Godde No. 1 at a total depth of 2130 feet. The well has been converted to a water well.

#### East Los Angeles Test

General Exploration Company is preparing to drill Conoco No. A-1 located near the intersection of Vail and Elm Streets on Section 15-2s-12w. The location falls one mile southeast of the East Los Angeles Field production.

#### Texaco Outpost Test

Texaco Inc. is grading location for Century Park Unit One No. 1 approximately 1250 feet northwest of the Howard Townsite producing area of the Athens Field. Rig site is near the intersection of Western Avenue and Imperial Highway on Section 11-3s-14w.

#### Riverside County Wildcat Test

In the Prado Dam area, Lido Petroleum Company has staked location for a 3800 foot test on the Hudson property on Lot No. 9 in Section 18-3s-7w. The company has purchased a portable mast and a Wilson rig and are planning to drill seven wells during the year.

#### Corona Area Wildcat

CA-SP No. 2 (C. E. Cather and Kenneth Sperry of Long Beach) are drilling below 2100 feet on Union-Wright No. 1 located in the southeast quarter of Section 33-3s-7w. Pacific Drilling Co. is drilling the 3000 foot test.

#### Horse Meadows Test Abandoned

Porter Sesnon et al abandoned Horse Meadows No. 3-47, a southerly offset to production, at a total depth of 4911 feet. The test was located in the northeast quarter of Section 4-2n-16w.

#### Two Dominguez Wells For Shell

Shell Oil Company has staked location for Reyes No. 164 near the northwest property corner on Section 33-3s-13w, and for Reyes No. 165 on Section 34-3s-13w, located south and west from the intersection of Victoria Ave. and Wilmington Blvd.

#### Huntington Beach Test For Texaco

Texaco Inc. is grading location for Brown No. 14, a field well, located in the northeast quarter of Section 11-6s-11w. Davis & Thompson have received the contract to do the drilling.

### NORTHERN CALIFORNIA

#### Yolo County Deep Test

Artnell Company has staked location for Rickey et al No. 1 located in the center of the southwest quarter of Section 35-11n-1w south of the Dunnigan Hills gas area.

#### Glenn County Wildcat Test

In the Hamilton City area, Peacock Oil Company, of Beverly Hills, is preparing to drill Green-Weldgen No. 1, a 2000 foot test, located in the northeast quarter of Section 15-22n-2w. The lease is a farm-out from Buttes Gas & Oil Company.

#### Sutter County Gas Test

Western Gulf Oil Company drilled to 1410 feet on Traynor Unit No. 1-A and is running a test on the interval 1382-1410 feet. The test is located near Live Oak in the northeast quarter of Section 3-16n-2e, eight miles southeast of the Wild Goose field.

#### Colusa County Gas Discovery

Western Gulf Oil Company is running a series of production tests on F. J. Strain No. 1, a new field discovery six miles southeast of the Arbuckle Gas area. On a test of the interval 8468-8487 feet, gas was gauged at 2910 mcf per day flowing through a 3/8" bean with 515 psi flow pressure. The well was drilled to a total depth of 8971 feet and has 5½" casing cemented at 8832 feet. Location of the discovery well is in the northeast quarter of Section 14-13n-1w.

#### Glenn County Wildcat Test

In the Beehive Bend area, Kent Petroleum Corp. has staked location for Kent-St. Louis No. 1 in the southeast quarter of Section 23-19n-2w. The test, a westerly offset to production, will be drilled to approximately 6300 feet.

#### Willow Pass Test Suspends

George E. Cameron, Jr. suspended operations on Kellar Estate No. 1 after drilling to a depth of 4005 feet. The well was located in the southwest quarter of Section 26-2n-1w, 2½ miles southeast of the Willow Pass gas field.

### COASTAL AREA

#### Oxnard Completion

Standard Oil Company completed Maulhardt Community No. 9 from the perforated interval 6703-6614 feet flowing 226 b/d of 22.0 gravity oil cutting 14 per cent through a 12/64" bean with pressures of 420/100 psi and a gas flow of 34 mcf. Located in the southwest quarter of Section 36-2n-22w, the well was drilled to a total depth of 6800 feet and cemented 4½" casing at 6800 feet.

#### Ventura Avenue Outpost Test

Tidewater Oil Company is starting V. L. & W. No. 140, an outpost test 1000 feet south of production, on Section 25-3n-23w.

#### Santa Barbara County Test

In the Point Conception area, Belco Petroleum Corp., with offices in New

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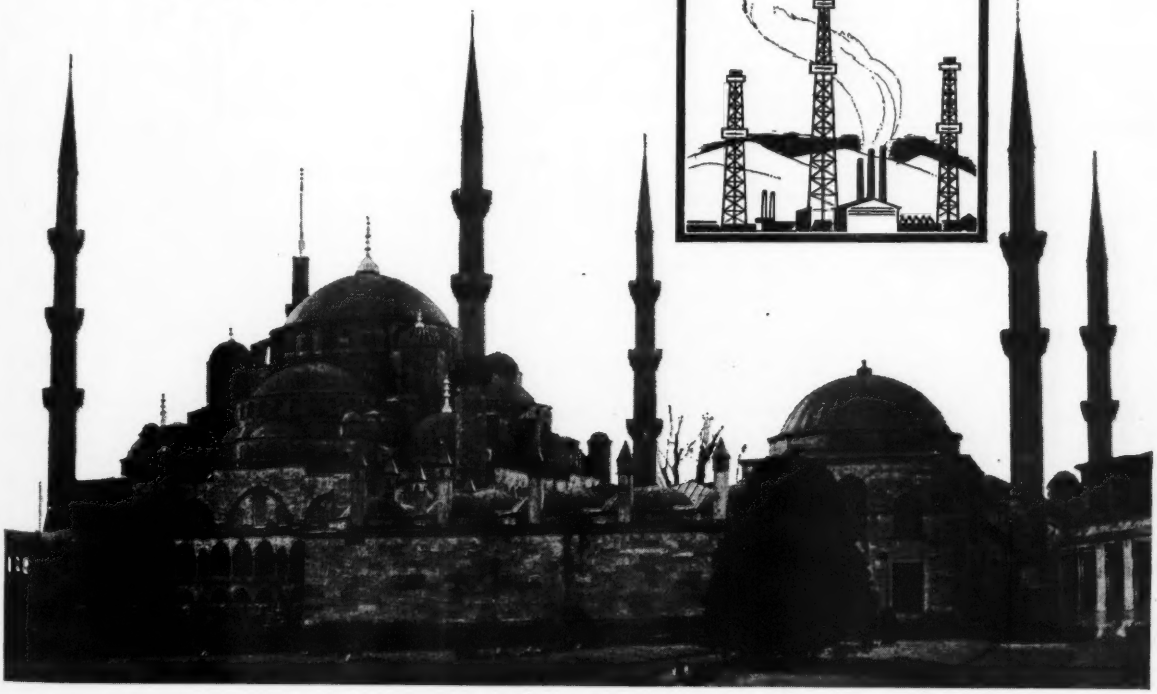

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York City, have commenced drilling Belco-Fox No. 1, a wildcat test in the southeast quarter of Section 35-5n-33w.

### Ventura County Wildcat Abandoned

Two miles north of the South Mountain field in the Fillmore area, Franco Western Oil Company abandoned Standard-Thorup No. 1-6 after drilling to a total depth of 12,026 feet. The well was located in the northeast quarter of Section 6-3n-20w.

### Oxnard Field Test

Standard Oil Company is drilling below 6600 feet on Daily No. 2, a field development well, located in the southwest quarter of Section 12-1n-22w.

### Temescal Wildcat Abandoned

E. B. Hall and Company abandoned Bolsa Chica No. 1 at a total depth of 1711 feet after several bailing tests recovered a small amount of fluid. The well was located in the southeast quarter of Section 5-4n-18w.

### South Mountain Completion

In the Bridge area, Texaco Inc., completed Norcop-B No. 4 as a dual completion flowing 1500 b/d rate oil cutting 10 per cent from both zones. Located in the northeast quarter of Section 22-3n-21w, the well was drilled to a total depth of 12,300 feet and plugged back to 10,715. 5½" casing with 1065 feet of perforations was landed at 10,715 feet.

### Fillmore Outpost Completion

Standard Oil Company completed Standard-General Petroleum-Arundell No. 2 flowing 396 b/d of 32.6 gravity clean oil through a 15/64" bean with pressures of 1000/1100 psi and 375 mcf of gas per day. Located in the northeast quarter of Section 19-4n-19w, 1800 feet northeast from production, the well was drilled to a total depth of 14,868 feet and cemented 7" casing on bottom. Casing was jet perforated from 14,712-14,771 feet.

### Summerland Offshore Test

Standard Oil Company is preparing to drill Standard-Humble-Summerland State No. 10 in projected Section 35-4n-26w, a tideland well offshore from Summerland.

### West Bardsdale Wildcat Test

Midway between the South Mountain and Bardsdale fields, Shell Oil Company is grading location for Daniels No. 1 in the southwest quarter of Section 10-3n-20w.

### Tapo Canyon Test Abandoned

Aeco Corporation abandoned Aeco-Nordon-Sunset Tapo No. 2-13 at a total depth of 2250 feet. No tests were run on the well located in the northeast quarter of Section 13-3n-18w.

### Offshore Well Suspended

Standard Oil Company's Summerland offshore well, Standard-Humble-Summerland State No. 9, has suspended operations at a total depth of 9541 feet. Location of the well is in projected Section 35-4n-26w.

### Humble Ventura County Test

In the West Montalvo field, Humble Oil and Refining Company has spudded Montalvo Unit One No. 1 located in the southeast quarter of Section 31-2n-22w.

## SAN JOAQUIN VALLEY

### New Pool Discovery

Drilling & Production Company completed Orchard No. 44-32 flowing 85 b/d of 47.0 gravity oil cutting 0.1 per cent. Flow was through a 8/64" bean with pressures of 420/1920 psi. Located one mile west of the Dagney producing area of the Pyramid Hills Field in the southwest quarter of Sec-


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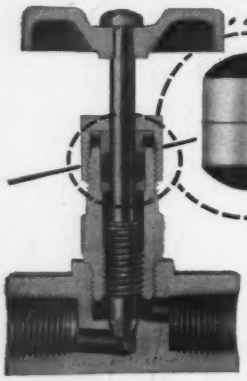

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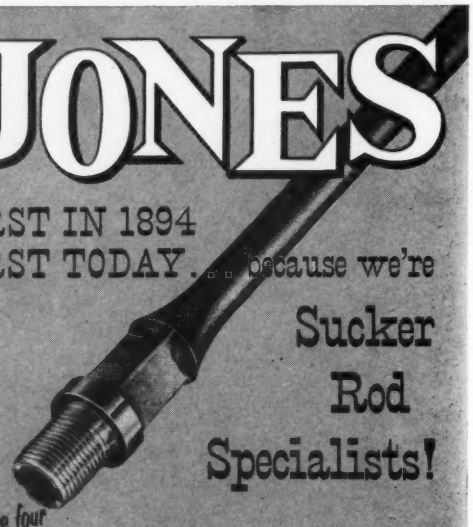

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tion 32-24s-18e, the well was drilled to a total depth of 4960 feet and cemented 5½" casing at 3934 feet. Casing was then perforated for production.

## New Field for Tidewater

Tidewater Oil Company's newly discovered producing area in Kern County has been officially named the Lakeside Field, and the well KCL No. 15-2 has been credited as being the discovery well. Located in the southwest quarter of Section 2-31s-26e, the well was drilled to a total depth of 8941 feet and cemented 7" casing at 8873 feet. The test was completed December 30th flowing 232 b/d of 34 gravity clean oil through a ⅜" bean from the Upper Stevens Sand interval 8873-8941 feet. First production in the field was obtained in November by KCL No. 86-3, 900 feet southeast, which established a flow rate of 700 b/d of clean oil on a drill stem test. This well, which logged 99 feet of Upper Stevens sand, is currently drilling ahead in the Stevens section below 11,400 feet for possible deeper production. The company will immediately spud a step-out well, KCL No. 75-3, 1320 feet due west of KCL No. 15-2, and plans to keep two rigs busy developing the new field. Tidewater has a solid block of 3000 acres leased in the area, bulk of which was obtained from the Kern County Land Company.

## Golden Bear Wildcat Test

Golden Bear Oil Company has staked location for Connell No. 1, a wildcat test in the southwest quarter of Section 6-31s-23e. Location of the test is north of the Buena Vista Hills field and southwest of Elk Hills production.

## Round Mountain Area Test

Golden Bear Oil Company drilled to 1962 feet on Olcese Estate No. 21-1 and is fishing for drill pipe. The test is located 3000 feet east of production in the southeast quarter of Section 21-28s-29e. A location has also been staked for Olcese No. 22-1 in the southeast quarter of Section 22-28s-29e.

## Northwest Trico Wildcat Test

Beach, Church and Bell logged wet Mya Sand in South Lake Farms No. 1-25 at 2788 feet and abandoned the test after drilling ahead to a total depth of 2900 feet. The well was located 1½ miles northwest of production in the northeast quarter of Section 25-23s-21e.

## Kern River Test

McCulloch Oil Exploration Company of Calif., Inc., has awarded a drilling contract to Gary Core Drilling Co. to drill Beggs-KCL-385 No. 1A, a 1700-foot test located in the southeast quarter of Section 8-29s-28e.

## Fresno County Wildcat Test

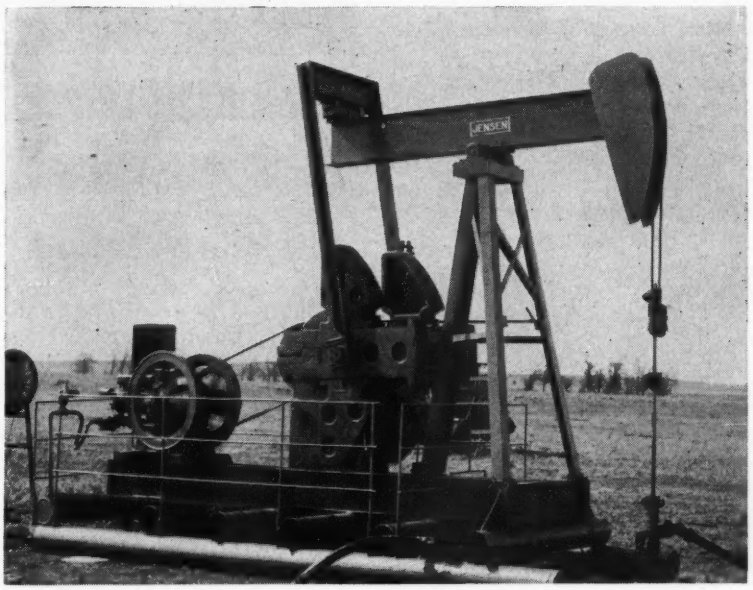
Michigan Oil Company, with offices in Bakersfield, has staked a location for Summit Lake No. 1 in the southeast quarter of Section 14-17s-18e. The location falls approximately 2000 feet north of the Lanare producing area of the Helm field.

## San Benito County Test

Albert L. Gibson of Los Angeles is grading rig site for D'Arcy No. 10X, a 2500-foot test located in the northeast quarter of Section 29-16s-11e. The well, an outpost test, is approximately 1000 feet northwest of the Cedar Flats area of the Vallecitos field.

## Shell Kern County Wildcat

One mile west of Mountain View production, Shell Oil Company is pre-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paring to drill KCL No. 73-16 in the northeast quarter of Section 16-30s-28e. The well will be a Stevens Sand test.

### North Tejon Completion

Richfield Oil Corporation completed ROC-KCL-G No. 54-24 flowing 75 b/d of 60.5 gravity oil cutting 0.1 per cent and 1617 mcf of gas per day. Flow is from the perforated interval 8653-8796 feet through a 12/64" bean. Located in the northeast quarter of Section 24-11n-20w, the well was drilled to a total depth of 9381 feet and after plugging back to 8798 feet, cemented 7" casing at 8451 feet.

### Cantua Creek Test Abandoned

Five miles north of Coalinga, Bell Petroleum Company abandoned Bell-Universal-S.P. No. 54-7 at a total depth of 9500 feet. The test logged six feet of gray Leda sand. Location of the well was in the northeast quarter of Section 7-18s-16e.

### Paloma Well to Deepen

Western Gulf Oil Company is rigging rotary to deepen L.A.A.C. No. 28-6 to the Paloma Sand. Located in the southwest quarter of Section 6-32s-27e, the well was first completed in 1947 from a total depth of 11,323 feet flowing 110 b/d of 60 gravity clean oil.

### McKittrick Gas Completion

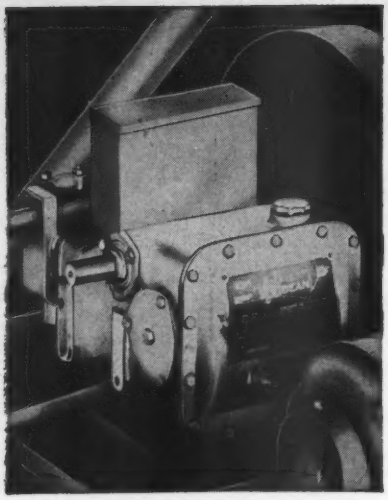
Standard Oil Company completed Well No. 8-5-17Z, a shallow gas well, flowing 310 mcf of gas per day through a 20/64" bean from the interval 924-970 feet. Located in the northeast quarter of Section 17-30s-22e, 3000 feet from production, the well was drilled to a total depth of 1150 feet and plugged back to 970 feet. 8⅝" casing is cemented at 924 feet.

### Fruitvale Extension Test

Coast Exploration Company has awarded a contract to Miller & York Drilling Co. to drill Capital Company No. 52X, an extension test of the field. The test is located in the northeast quarter of Section 20-29s-27e, 1000 feet southwest of Union Oil Company's recently completed KCL No. 41X-20, which was good for 110 b/d of 21.6 gravity clean oil.

### Trico Gas Field Test

Standard Oil Company has staked location for Discombe Community No. 3, a field well, located in the southeast quarter of Section 1-24s-22e.

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### Monterey County Discovery

Five miles south of King City in the Rancho San Bernabe area, Richard R. Thorup, Operator, completed Thomas Dowd Estate No. 2 as a new field discovery pumping 80 b/d of 15 gravity oil cutting 15 per cent. Located in the southwest quarter of Section 32-20s-8e, the well was drilled to a total depth of 2483 feet and plugged back to 2140 feet. 7" casing is cemented at 2004 feet and a 5" perforated liner hung at 2130 feet.

### Pleito Creek Wildcat

Three miles east of the Los Lobos field, Texaco Inc., has staked location for KCL-Pleito Creek No. 1 in the northeast quarter of Section 25-11n-25w. This 11,000-foot test will be drilled by Bell & Burden, Inc.

### South Paloma Test

Rocky Mountain Drilling Company, Operator, is grading location for Standard-Mohawk-MJM&M-USL No. 1 in the northwest quarter of Section 24-32s-26e. Located 1½ miles south of the Paloma field, the well will be drilled to approximately 12,500 feet for a test of the Paloma Sand.

### McDonald Anticline Completion

W. & L. Landco, Inc., completed Theta No. 2 pumping 75 b/d rate of 20.0 gravity oil cutting 5%. Located in the northwest quarter of Section 20-28s-20e, the well was drilled to a total depth of 2340 feet and cemented 7" casing at 2260 feet. A 5¾" liner was landed on bottom and perforated from 2260-2340 feet. The company is starting Theta No. 3, located 1214 feet south and 1628 feet east from the northwest corner of Section 20-28s-20e.

### Buena Vista Hills Test

Standard Oil Company is preparing to drill Well No. 63-15B, an edge well, located near the north quarter corner of Section 15-31s-23e.

## OTHER AREAS

### Alaska

Union Oil Company and The Ohio Oil Company released results of the test on their gas discovery well and on the second and third completions on the Kenai Peninsula. The discovery well, Union-Ohio-Kenai Unit No. 14-6 located in Section 6-4n-18w, flowed 31,000 mcf of gas per day through a ⅞" bean with a flow pressure of 1650 psi from the perforated interval 4455-4590 feet. 7" casing is

cemented at 4616 feet. The test was drilled to a total depth of 15,047 feet before plugging back to 4606 feet and completing. The second well flowed 17,000 mcf of gas per day from the perforated interval 4834-4858 feet. Located in the southeast quarter of Section 31-5n-1w one mile north of the discovery, the well was drilled to a total depth of 5809 feet and cemented 7" casing at 4950 feet. The third producer, Union-Ohio-Kenai Unit No. 33-30, was completed flowing 15,000 mcf of gas per day through a ⅜" bean with pressures of 1075/1500 psi from the perforated interval 4240-4277 feet. Located in Section 30-5n-11w, the well was drilled to a total depth of 5011 feet and cemented 7" casing on bottom.

## Colorado

Texaco Inc. completed Government-Knowlton No. 18 in the Moffat Field, Moffat County, as a new Weber Sand discovery flowing 1100 b/d of 39.9 gravity clean oil through a ½" bean. Texaco's discovery has created widespread interest and will undoubtedly result in considerable exploration work in the general area. Located in the northwest quarter of Section 10-4n-91w, the well reached a total depth of 5975 feet and cemented 7" casing at 5797 feet.

In the eastern part of the state, W. C. McBride, Inc., completed Hoxie No. 1 as a new discovery pumping 85 b/d from the J Sand perforations 4961-4965 feet and 4972-4978 feet. Top of the sand was logged at 4959 feet. Located in the southeast quarter of Section 31-8n-53w in Logan County, the well was drilled to a depth of 5055 feet and cemented 5½" casing at 5054 feet.

## New Mexico

Humble Oil & Refining Company is drilling below 4000 feet on its San Juan County deep test, Nancy-H No. 1, in the northwest quarter of Section 4-31s-18w. Located six miles west of the Gallup production, north of the Chimney Rock Field, the well will be a 8100-foot Mississippian test.

Amerada Petroleum Company is drilling below 5000 feet on Navajo No. 1, located in the southeast quarter of Section 24-30n-20w. The well is a 6600-foot Molas test.

Delhi-Taylor Oil Company has staked a location for Drolet No. 1, a 6200-foot Dakota test in the southeast quarter of Section 28-26n-11w.

Pan American Petroleum Company will drill Northeast Hogback Unit No. 1 in the northwest quarter of Section 36-30n-16w. The well will be a 5000-foot Dakota test.

## Utah

Five miles south of the Red Wash field in Uintah County, Alamo Corporation has staked location for Kennedy Wash No. 1 in the northwest quarter of Section 27-8s-23e. This will be a 10,500 foot Mesaverde test.

Standard Oil Company of Calif. has staked a location for Well No. 12-23A, a Green River test, in the northeast quarter of Section 23-7s-22e in Uintah County.

Locations for five new wells were staked in San Juan County, two wildcats and three field wells. The Superior Oil Co. will drill Navajo No. 12-24 in the northwest quarter of Section 24-41s-24e in the White Mesa field. Shell Oil Co. will drill Boundry Butte No. 2, a wildcat test in the northwest quarter of Section 16-42s-22e. This will be a 5800-foot Paradox test. Mobil Oil Company will drill Lean-To No. 2, a 3700-foot Mississippian test, in the northwest quarter of Section 11-33s-16e. Texaco Inc., will drill Navajo F No. 3, an Aneth field test, in the northeast quarter of Section 29-40s-24w. Continental Oil Co. will drill Navajo C No. 17 at White Mesa in the southeast quarter of Section 3-42s-24e.

## Wyoming

Sohio Petroleum Company reached a total depth of 11,227 feet on Cow Creek Unit No. 1, located in the southeast quarter of Section 12-16n-92w in Carbon County, and is running liner to test. The well is one of the deepest drilled in this portion of the state and regardless of the up-coming test, is apparently a gas discovery, having flowed 5000 mcf of gas per day on a test of the interval 3884-3924 feet and 500 feet of oil from the interval 10,185-10,295 feet. 7" casing is cemented at 9970 feet.

In Sweetwater County near the West Desert Springs area, Pubco Petroleum Company completed well No. 3-28M, a northwest extension test, flowing 480 b/d of 46 gravity oil from the Almond Zone, perforated from 3665-3654 feet and 3648-3636 feet. Located in the southwest quarter of Section 28-20n-99w, the well was drilled to a total depth of 5556 feet and cemented 5½" casing at 5554 feet.


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"And now, gentlemen," continued the congressman, "I wish to tax your memory."

"Good heavens," muttered a colleague, "why haven't we thought of that before?"

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"Sell your house yet?"

"We've decided not to after reading the agent's description. It seemed to be just the place we were looking for."

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Doctor—(Inquiring after boy who has swallowed a quarter) "How is the boy today?"

Mother—"No change yet."

Joan: "I don't see how you could engage yourself to that old Mr. Wiggles. He hasn't a tooth in his head and he is pretty near bald."

Joan: "Well, my dear, you shouldn't be to severe with him—he was born that way."

---

Some years ago the Brown Hotel in Louisville, Ky., adopted the custom of naming a room in the hotel for each winner of the Kentucky Derby. There is a Zev Room, a Gallant Fox Room, a Whirlaway Room, and so forth. After the 1946 Derby, though, the management decided to discontinue the practice. The winner that year was Assault.

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"If I'd known that tunnel was going to be so long, darling, I would have kissed you."

"Gracious! Wasn't that you?"

Once a young college girl wrote the editor of a correspondence column, "I am only 19 and I stayed out till two the other night. My mother objects. Did I do wrong?"

The answer published in the paper next day: "Try to remember."

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A little lady of the house, by way of punishment for some minor misdemeanor, was compelled to eat her dinner alone at a small table in the corner. The rest of the family paid no attention to her until they heard her audibly delivering grace over her repast: "I thank Thee, Lord, for preparing a table before me in the presence of mine enemies."

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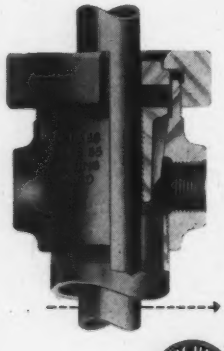

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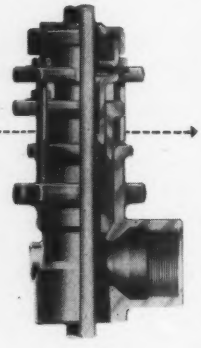

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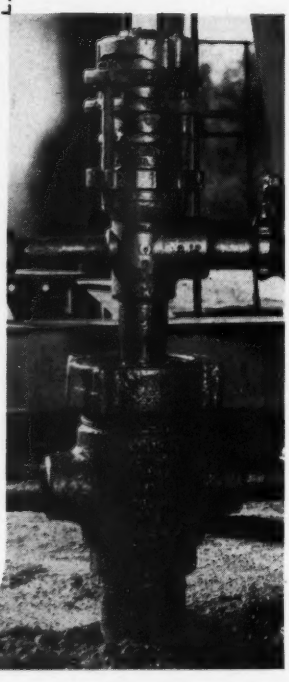

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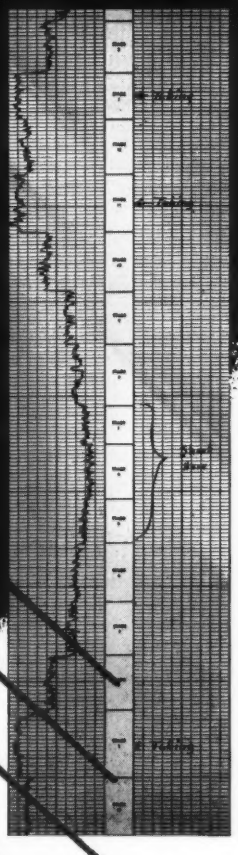

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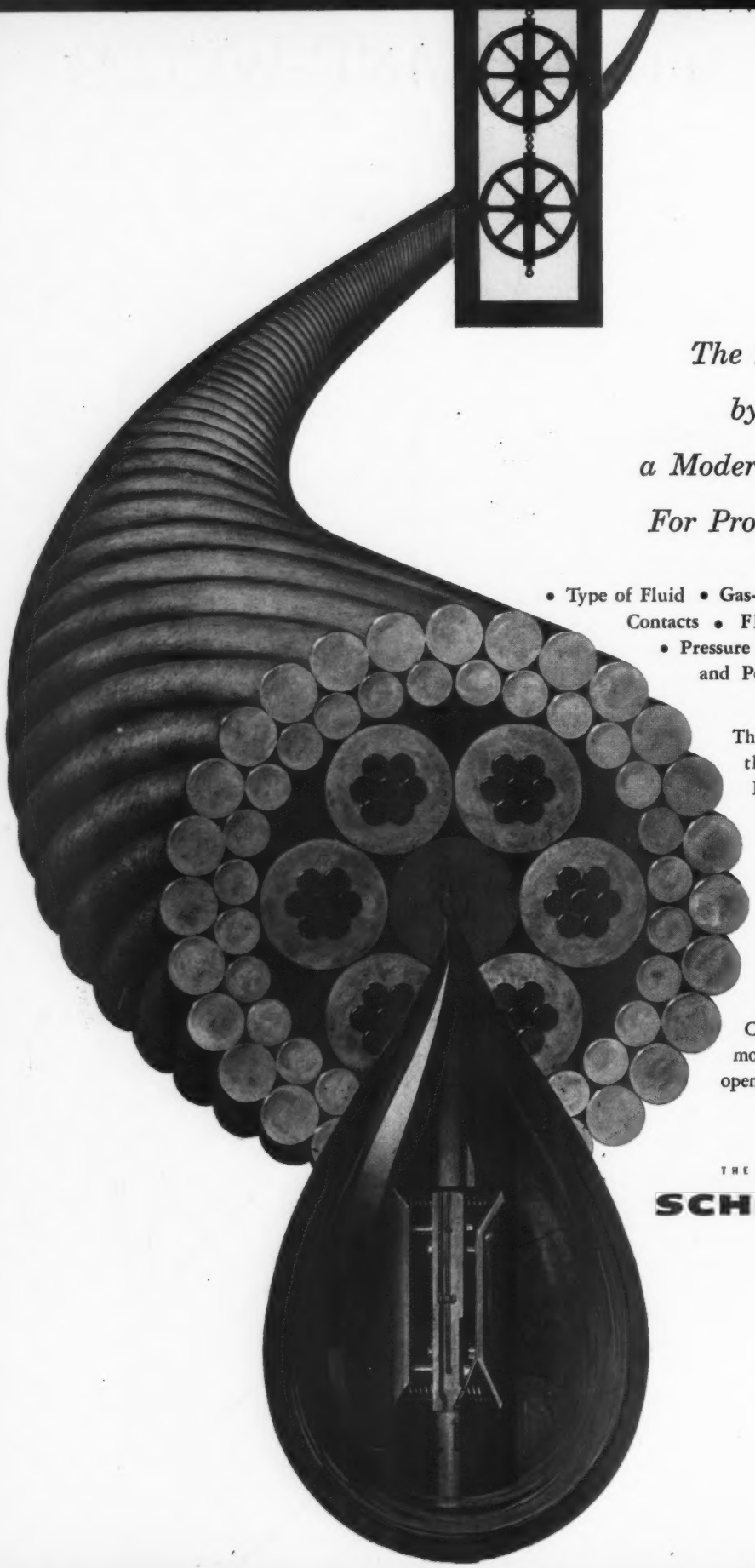

*The Formation Tester*

*by Schlumberger . . .*

*a Modern Wire Line Service*

*For Production Information*

• Type of Fluid • Gas-Oil Ratios • Gas-Oil and Oil-Water Contacts • Flowing and Shut-In Pressures • Pressure Build-Up for Formation Pressure and Permeability Studies

This is the information cabled to you at the surface by the Schlumberger Formation Tester.

The Formation Tester is another Schlumberger development for greater efficiency in oil-finding and production. You need only to drill the well, run Schlumberger logs, and use the Formation Tester in those zones showing promise of production.

Cut your well costs by employing this modern well completion tool — in either open or cased holes.

THE EYES OF THE OIL INDUSTRY®

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